THE PETROLEUM INDUSTRY

HEARINGS

BEFORE THE

SUBCOMMITTEE ON
ANTITRUST AND MONOPOLY

OF THE

COMMITTEE ON THE JUDICIARY
UNITED STATES SENATE

NINETY-FOURTH CONGRESS

FIRST SESSION

ON

S. 2387 and Related Bills—S. 739, S. 745, S. 756, S. 1137, and S. 1138

VERTICAL INTEGRATION

PART 3

JANUARY 21, 22, 27, 28, 29, 30, FEBRUARY 3, AND 18, 1976

Printed for the use of the Committee on the Judiciary

(Pursuant to S. Res. 72, Sec. 4)

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Senator Hruska convenes the hearing ---- 1819

William P. Tavoulareas, president of Mobil Oil Corp. is introduced ---- 1819

Mr. Tavoulareas reads a prepared statement to the subcommittee. He acknowledges the great changes that have occurred in the oil industry in the past 2 years. He states that there is no oil monopoly, pointing out that the largest refiner, producer, and marketer each has no more than slightly higher than 8 percent of the output/capacity/business ---- 1820–22

Mr. Tavoulareas discusses the reasons for abnormally high profits by the oil industry in 1974—he attributes these largely to inventory profits taken during a year of high price increases, and states that profits have dropped in 1975 ---- 1821–22

The witness stresses the necessity for large firms to invest in other fuel companies. He describes the large amounts of capital needed in these projects, and expresses his fear that the cost to the American public, if divestiture were ordered, would be immense ---- 1823

Mr. Tavoulareas points out that divestiture is usually court-ordered after antitrust laws are found to have been violated. Here, neither Justice nor FTC have found an antitrust violation. He further states his fears that divestiture will not cause the price of oil to decline nor the price of gas to fall, but may, in fact, cause the further depletion in our supply of oil ---- 1825–26

Senator Hruska questions Mr. Tavoulareas on the effect divesiture might have on the international oil situation, particularly as it would affect the American oil industry ---- 1826–29

Senator Hruska questions Mr. Tavoulareas about independent pipeline producers. He also questions the witness about concentration in the industry ---- 1829–30

Senator Hruska and Henry Banta, assistant committee counsel, question the witness about various aspects of Mobil's financial operation and accounting methods ---- 1830–34

Mr. Banta questions Mr. Tavoulareas about the size of Mobil, seeking information as to the equation of size and efficiency. He also questions the witness about Mobil's worldwide operations, particularly its relationship with Saudi Arabia ---- 1833–36

Mr. Banta questions the witness about Mobil's rate of return on its pipeline investments ---- 1836–37

Senator Hruska questions Mr. Tavoulareas about the impact of a divestiture bill on the energy industry, particularly as to whether or not it would improve operations ---- 1837–40

Max D. Eliason, president, Rocky Mountain Oil and Gas Association, is introduced ---- 1840

Mr. Eliason describes the makeup of his organization. He explains his opposition to the divestiture bills, and feels that oil companies are being unfairly accused of being part of a monoply. He further states that steps already taken by the Congress have only worsened the problem ---- 1840–44

Mr. Eliason details the negative effects that would follow the dismantling of the major integrated oil companies ---- 1844–46

Dr. Measday, staff economist, questions Mr. Eliason about production, profits, and the lease operations of Skyline Oil ---- 1846–47

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Edward J. Mitchell, professor of business economics, University of Michigan; director, national energy project, American Enterprise Institute. Dr. Mitchell is introduced to the committee	1849
Summary statement of Dr. Mitchell	1849–52
[Prepared statement]	
Dr. Mitchell indicates his opposition to the idea of divestiture	1852
He states that vertical integration is not presumptively anticompetitive, and that even if vertical divestiture were accomplished, there would be no effect on concentration at each stage	1853
In Dr. Mitchell's opinion, the petroleum industry has a low degree of vertical integration. He cites statistics backing up his opinion	1853–56
There are, he maintains, substantial cost savings from vertical integration	1856–59
Because of this, small and large, and public and private firms, both in the United States and abroad, have moved towards vertical integration	1869–70
Dr. Mitchell denies that small nonintegrated firms are squeezed out of the industry by integrated firms	1870–77
He maintains that there is no excess profit being made by highly integrated refiners, as opposed to the less integrated firms	1877–79
[End of prepared statement]	
Dr. Measday, staff economist, questions Dr. Mitchell about the data used in his study. He also questions Dr. Mitchell about the interpretation of that data. Dr. Mitchell responds	1881–82
Dr. Measday questions whether or not Dr. Mitchell's opinions are outdated. Dr. Mitchell responds in the negative, explaining his position	1882–83
Dr. Measday questions Dr. Mitchell about a discrepancy between his testimony and that of another witness, on the subject of rate of return on the various assets in refining, marketing, and production	1883
Mr. Bangert, general committee counsel, questions the witness about the ethical stance of using a study which relied on data not available to the public	1884
Senator Hruska and Dr. Mitchell further discuss the theory that vertical integration is not presumptively anticompetitive	1884–86
Senator Hruska and the witness discuss the practical effects and ramifications of divestiture	1886–90
Richard Mancke, the Fletcher School of Law and Diplomacy, Tufts University, is introduced to the committee. Professor Mancke makes a summary statement	1890
[Prepared statement]	
Professor Mancke discusses antitrust law, monopolies, oil exporting countries, and oil companies, all in a very general manner. He concludes that oil companies no longer possess measurable monopoly power in any important energy market	1895–97
Professor Mancke discusses various aspects of the domestic petroleum industry, including the production of crude oil, and its eventual transportation, refining, and marketing	1897–1903
The witness analyzes the international oil market and concludes that the evidence no longer supports the inference that the large international oil companies continue to exercise significant monopoly power in the world crude oil market	1903–06
He then analyzes the role of oil companies in the natural gas, coal, and uranium industries, and concludes that there is, at present, no existing monopoly	1906–09
Professor Mancke analyzes oil industry profits, and concludes that their poor profit performance is inconsistent with the monopoly charges leveled against them	1909–11
He disputes an allegation raised against the major oil companies; that both import quotas and the oil depletion allowance give them advantages over independent competitors	1911–13

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He concludes by reaffirming his view that the major oil companies do not possess monopoly powers. He then discusses four factors which explain the different assessments of the industry by the public on one hand, and academic experts on the other	1913–16
[End of prepared statement]	
Senator Hruska questions Professor Mancke about the practical aspects involved in achieving divestiture. They also discuss price rollbacks on domestic oil, and the political considerations that may have motivated a legislator to vote for that legislation	1916–17

JANUARY 27, 1976

Summary statement by Peter A. Bator, Davis, Polk and Wardwell, attorneys-at-law, New York, N.Y. The complete statement is analyzed	1919–25
[Prepared statement]	
Mr. Bator indicates that the process of obtaining divestiture would be lengthy, arduous and expensive	1925–26
He analyzes S. 2387 in terms of what it would require, and which corporations would be affected, in any divestiture process	1926–29
Mr. Bator analyzes the possible methods of achieving divestiture	1929–30
The witness discusses the legal consequences of divestiture. He points out that violation of certain covenants by the oil companies may result in default under various financing documents	1929–31
Mr. Bator discusses other contractual problems that would arise including those caused by the prohibition of certain contractual relationships and the prohibition against assignment	1931–32
Other noncontract problems that would arise include pension, tax, and investment matters	1932–33
Mr. Bator discusses the complex and large number of issues that the FTC would be forced to involve itself in, if the divestiture legislation were enacted	1933–35
The witness compares the difficulties of oil industry divestitures to those encountered under the Public Utility Holding Company Act of 1935	1935–36
Mr. Bator comments on the bill, and expresses his opinion that it will not only not achieve the aims of its proponents, but will, in fact, be a lengthy, time-consuming process that will endanger the country's energy industry. He cites legal difficulties to be encountered in achieving divestiture	1936–38
[End of prepared statement]	
Senator Hruska questions Mr. Bator about the status of the oil industry over the possible 20-year period during which divestiture might be occurring. Mr. Bator describes the situation with the word "chaos"	1940–43
Mr. Bator and Senator Hruska discuss various aspects of constitutional law as it would relate to potential litigation on this matter	1943–45
The Senator and Mr. Bator look at various cases that have involved divestitures, and compare them to the present oil industry controversy. They discuss the Standard Oil case, the Holding Company Act of 1935, and the Loew's case	1945–49
The Senator and Mr. Bator discuss the possible unconstitutionality of S. 2387 as a criminal statute, in that it is allegedly impermissibly vague and ambiguous	1949–50
Senator Hruska and Mr. Bator discuss the benefits of the case-by-case approach as opposed to the more inflexible approach allegedly utilized by this legislation	1949–50
Senator Hruska and Mr. Bator discuss the financial problems regarding indebtedness that will allegedly occur if this legislation is passed	1950–52
Senator Hruska, Mr. Bator, and Mr. Bangert discuss aspects of Mr. Bator's testimony—particularly, the amount of time needed to accomplish divestiture, and the theory that various agreements between parents and subsidiaries would become null and void. They then discuss the problems, if any, that exist in the present pipeline structure	1952–56

Mr. Bangert questions Mr. Bator about the propriety of divestiture, as presented in the legislation at hand. They also discuss the ability of any divestiture scheme to accomplish (either by legislation or litigation) all of the problems discussed by Mr. Bator in his presentation ---- Page 1956–57

Senator Hruska and the witness discuss burden-of-proof. They also discuss the possibility of a revised bill that would split up the industry and still permit the various sections to gain an adequate capital base ---- 1957–59

Statement of Raymond Gary, Morgan Stanley & Co., New York, N.Y. The following digest is taken of Mr. Gary's complete printed statement, and the page numbers refer to that document ---- 1959–65

[Prepared statement]

Mr. Gary discusses the background of Morgan Stanley, Inc., an international banking firm engaged in the underwriting and placement of securities for corporations and governments. He describes the changed outlook of investors toward the oil companies ---- 1965–66

He looks at the need for capital and the attitude of investors, and concludes that passage of S. 2387 would have the effect of excluding the petroleum industry from the capital market ---- 1967–68

Mr. Gary analyzes the capital requirements of the petroleum industry, and contrasts these needs with investor concerns about the attractiveness of oil investments. He cites specific areas of investor concern including growth prospects and ratings ---- 1968–70

Mr. Gary applies the above-mentioned fears and areas of concern to the Trans Alaska Pipeline System. He discusses the financing of that operation ---- 1970–72

Mr. Gary discusses the financial consequences that would allegedly result from S. 2387, or a similar piece of divestiture legislation. Among the effects are these: capital expenditure programs would be sharply curtailed; the manner of divestiture would probably be by spinoffs to existing shareholders; the allocation of debt would further distress lenders ---- 1972–74

The witness states that it will take an extended period of time for a plan to be developed which will comply with the legislation, establish new businesses, and still be equitable. During this period, the industry would be stagnant. Further, irreparable harm would be done to U.S. oil interests overseas ---- 1973–74

Mr. Gary discusses financing and investment problems that would occur as a result of divestiture, during the 10-year period following the passage of such legislation ---- 1974–76

He concludes by discussing the long-range consequences of divestiture. Mr. Gary feels that the oil industry may be cut off from capital markets for an indefinite period ---- 1976–77

[End of prepared statement]

Senator Hruska and the witness contrast the present legislation with the Senate Oil Act of 1911 and the Holding Company Act of 1935 ---- 2000–01

The Senator and Mr. Gary discuss means of capitalization in the oil industry ---- 2001–02

They discuss the effect of S. 2387 on the Trans-Alaska Pipeline ---- 2002–03

The Senator and Mr. Gary discuss pipeline operation and financing. They discuss constitutional and practical obstacles to the effective operation of this bill ---- 2002–05

Dr. Measday questions Mr. Gary about his estimate of the risks to investors, if this legislation were passed ---- 2004–05

Dr. Measday and the witness discuss the Elkins Act consent decree, referred to by the witness in his testimony ---- 2005–06

Dr. Measday and Mr. Gary discuss cash deficiency agreements ---- 2006–07

Dr. Measday, Mr. Gary, and Mr. Bator discuss the complexity of restructuring the industry. Dr. Measday uses the Pennzoil acquisition of United Gas in 1968 to show that the obstacles are not insurmountable. Mr. Bator responds that there is a significant difference in the size and scope of the Pennzoil merger, and that which is contemplated here ---- 2007–08

They continue to discuss the viability of divestiture. Mr. Bator points out that, not only is there a difference in size, but also in the type of disposition: this divestiture is contrasted with that required by the Utility Company Holding Act. Mr. Gary discusses capital differences between the holding company divestiture and this one---- Page 2008-09

Statement of Paul Olson, in behalf of Maxwell Oil Co., Olympia, Wash. Mr. Olson details his background in the industry, and that of the owner of the Maxwell Oil Co., Henry Maxwell. He details the fears he has over divestiture, particularly for what it would do to the independent oil jobber---- 2010-14

JANUARY 28, 1976

Mr. Richard Boushka, president of Vickers Energy Corp., is introduced to the committee. Vickers is the 29th ranked oil corporation in the United States. Mr. Boushka discusses the impracticality of divestiture by the major companies. He details the negative effects that would flow from divestiture, and maintains that both the consumer and the smaller oil companies would be harmed by such an action-- 2015-19

Senator Hruska questions the witness as to how newcomers to the industry would be able to attract capital if divestiture was, in fact, ordered---- 2019-20

Mr. Bangert and Mr. Boushka discuss the high costs to the majors of the marketing system used by them---- 2020-21

Mr. Bangert and the witness discuss whether or not the huge number of gas stations is due to the vertical integration of the majors; that is, they were producing large amounts of crude and had to get rid of it in some fashion---- 2021-22

Mr. Bangert and the witness continue to discuss various problems of independent producers---- 2022-24

Mr. Bill Brier, director of energy resources, National Council of Farm Cooperatives, is introduced to the committee. He expresses the fears of his organization as to the effect that this legislation might have on the ability of farm cooperatives to obtain oil. He states that it is the belief of farm cooperatives that vertical integration in the oil industry is the best way to assure a source of supply at a low cost-- 2024-26

Dr. Measday questions Mr. Brier about the effects of higher crude oil costs, and also the reaction of farm co-op members to propane prices---- 2027-28

Otis H. Ellis, Esq., Petroleum Marketing Consultant, Arlington, Va. Mr. Ellis discusses his broad background in the industry, and his reasons for opposing this legislation. He expresses the fears that independent jobbers and dealers have over this legislation---- 2028-33

Mr. Ellis discusses economic factors in the petroleum industry, and social consequences that would flow from divestiture---- 2033-37

Senator Hruska and Mr. Ellis discuss the impracticality of divestiture—the complex task that it is both to achieve and to supervise- 2037-40

Senator Hruska and the witness discuss burden of proof; also the effect of divestiture on the availability of petroleum while divestiture is occurring. They further discuss the effect of divestiture on potential investors in the industry, and on national defense. They conclude with a discussion of the dangers of shortsightedness---- 2040-46

JANUARY 29, 1976

Senator Roman L. Hruska and Senator Strom Thurmond, presiding, called the subcommittee to order and welcomed Mr. Lewis Kruger, of Krause, Hirsch, and Gross, New York, N.Y---- 2047

Statement of Mr. Kruger, as a consultant to the subcommittee, on the assumption that vertical divestiture of the oil companies is a desired goal, and if enacted into law, could be feasibly applied to the major oil companies---- 2047

There has been a long history of voluntary vertical divestiture of complex corporations in the United States---- 2048

These transactions have ranged from the sale of fully integrated companies to the sale of specific assets. A "Fortune 500" survey is mentioned---- 2048

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When the parties to a transaction are public companies, the marketplace evaluates the transaction and revalues the enterprises involved	2048
The velocity of such transactions has been governed by existing antitrust, antimonopoly, and tax legislation	2048
Mr. Kruger explained how a corporation's debtholders are secured and unsecured by the assets to be disposed of, and how their rights are affected	2048
The 1960's saw the growth of conglomerates; the 1970's have seen their decline and the divestiture of acquired companies	2049
Corporations have not divested themselves of portions of their businesses by spinning off subsidiaries. Instead, the parent corporation has delivered to its shareholders the shares of the subsidiary	2049
Where the segment of business to be spun off does not have separate subsidiary corporate existence, a new corporation is created by acquiring the operation to be spun off in exchange for its stock	2049
In theory, the rights of shareholders are unaffected, although the marketplace may value the aggregate of outstanding shares of the two separate companies	2049
Business is not without the requisite legal, accounting, and financial expertise to accomplish complex corporate transactions	2049
The courts have decreed divestiture, usually the result of actions taken by Federal agencies	2049
Mr. Kurger admitted that divestiture of the scope proposed in S. 2387 is of an unprecedented magnitude never before undertaken in U.S. economic and legal history, but added that the multinational corporation is likewise without precedent	2049
Assumed that S. 2387 becomes law	2050
Each oil company would structure the divestiture program that is most equitable to its investors, institutional lenders, and other creditors	2050
The company would be divided into four separate functions: production, transmsision, refinery, and marketing. Schedules of assets and cash flow projections would be made by function	2050
The company must decide whether to establish a great number of integrated oil companies or splitting the company into its four basic functions, retaining one of the functions for itself	2050
The portions of business to be divested may be sold or exchanged in the typical corporate sale of assets or subsidiaries or on a cash flow basis	2050
Under divestiture, rights of equityholders must be matched with the assets and prospective earning capacities of the respective four functioning companies	2051
Examples of fair and equitable treatment of affected persons as interpreted by the courts are mentioned	2051
Mr. Kruger concluded that oil companies will be able to produce divestiture plans that will meet the requirements of S. 2387, but warned that the proposed method of divestiture will give rise to disagreement and, perhaps, litigation	2051
S. 2387 anticipates the possibility of litigation by providing rights in the Federal Trade Commission to institute legal proceedings to accomplish the legislative mandate	2051
Such legal review is not without precedent. The FTC and the courts have Federal and State court decisions on the basic issues	2052
Until the courts render a final and nonappealable decision, enterprises will be able to finance their operations through the usual channels of long-term and short-term loans	2052
After divestiture, shareholders should change	2052
Previous committee witnesses have noted that divestiture would allow oil companies to meet their capital requirements. Whether this capital would be made available at greater than present rates is unclear	2052
A plan of divestiture presumably will result in divested components able to stand alone, each with sufficient assets and earnings potential to attract requisite capital	2053
While divestiture under S. 2387 will not be free of problems, Mr. Kruger believed it is feasible from a legal point of view	2053

In answer to a question by General Counsel Charles Bangert, Mr. Kruger noted that experts feel divestiture would take 10 to 20 years to complete. This is because litigation would require a 10- to 20-year period. Mr. Kruger felt that this time lag could be reduced if the courts give any litigation arising from S. 2387 top priority .... Page 2053
Mr. Kruger pointed out that there are two separate time frames present in the law concerning divestiture. One is the year within which to present a divestiture plan to the FTC. The other is that all divestiture must be completed within 3 years from the time S. 2387 is enacted. Kruger suggested that 18 months is a fairer time frame for the presentation of a plan of divestment and that 4 or 5 years might be a more appropriate time span within which to achieve divestiture 2054
Mr. Kruger stated that treating shareholders in a equitable fashion relates to the valuation of a business enterprise on an ongoing basis and pointed out that courts and Government agencies have made decisions on the valuation of business enterprises, especially in corporate reorganization cases in which the SEC has been involved 2054–55
Mr. Kruger suggested, with respect to an oil company's ability to raise sufficient capital, that, until there is a final court ruling on divestiture, a company would still be an integrated enterprise. Consequently, both short-term and long-term financing would still be available 2055–56
In answering Mr. Bangert's question on whether the oil industry needs large amounts of capital for exploration and production, Mr. Kruger explained that the production component may receive a larger share of investment money, thus finding itself very solvent and able to borrow long term on its own asset base 2056
Mr. Bangert asked if financing would have been available for the construction of the Alaskan pipeline had divestiture been passed prior to its construction. Mr. Kruger replied that investors have always been willing to take that kind of risk 2057
Mr. Kruger expressed concern that divestiture may affect the rights of pensionholders under the plan the compnaies have in existence now and suggested that current Federal pension laws may require modification to permit divestiture to be accomplished 2058
Mr. Kruger suggested that S. 2387 may not adequately deal with the management aspects of an integrated corporation under divestiture. Kruger recommended that a provision be drafted permitting each company to designate a board and designate officers for each component, giving them time to hold elections and from there allowing the course of corporate law to take its normal pace 2058
Mr. Kruger suggested that the New York Stock Exchange and the States amend their laws to allow fiduciaries to invest in the divested components of each oil company 2059
In response to a question by Mr. Bangert, Mr. Kruger concluded that if one were to take all the oil companies subject to S. 2387 and divided their sales by four in order to produce four separate components, all of the companies would be within the Fortune "250" in sales, with most of them within the Fortune "150" in terms of total shareholder's equity and total assets 2060
Senator Hruska questioned the feasibility of dividing an integrated oil company's sales and assets into four equal parts 2060
In answer to a question by Senator Hruska, Mr. Kruger ascertained that considerable manpower would be needed to estimate the separate profitability of each of the four components of an oil company 2061
Senator Hruska questioned whether, after divestiture, the new companies would be able to secure financing for the Alaskan pipeline project without a pledge of additional assets 2062
In response to further questioning by Senator Hruska, Mr. Kruger suggested that S. 2387 be amended to clarify the definition of control with respect to substantial long-term contractual relationships 2064–65
Mr. Kruger recommended extending the judiciary to handle any litigation arising from S. 2387 2065
The *Loew's* case is mentioned 2067
The *Equity Funding* case is mentioned 2067

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Mr. Kruger suggested that criminal penalties be dropped from the legislation and pointed out that additional funding and staff increases for the FTC are concomitant to the enactment of S. 2387	2068
Senator Hruska, in questioning the feasibility of the legislation's timetable for divestiture to be completed, pointed out that it took over 25 years to implement the provisions of the Holding Company Act of 1935 and the Public Uitlities Holding Company Act of 1935	2068
In response to further questioning by Senator Hruska, Mr. Kruger assumed that cross-guarantees would be precluded from the legislation	2071
Statement of Robert P. McGinley, president of SICO Co., Lancaster, Pa., pointing out that his statement represents the views of the SICO Co., the Pennsylvania Petroleum Association, and the Independent Oil Marketers Conference (IOMC). Mr. William Wrench and Mr. Richard Singletary, both of IOMC, accompanied Mr. McGinley	2072
Divestiture will lead to a relatively few marketers dominating regional markets for petroleum. Small marketers will be out of business	2072
In SICO's marketing area, the major oil companies operate 5 percent of the service stations. Approximately 88 percent are operated by independent marketers. Independents have kept the petroleum market competitive, resulting in lower prices for the consumer	2072–73
Divestment would result in higher prices and greater inconvenience to the consumer	2073
Vertical divorcement/divestiture would force the cost of additional capital requirements and credit card costs to be passed on to consumers	2073
Expressed concern that exchange agreements between suppliers and terminal operators could come under the control of others	2074
A large number of petroleum marketing properties would be placed on the real estate market and sold for nonpetroleum use	2074
Statement of Richard L. Singletary, president of Sing Oil Co., Thomasville, Ga	2074
No valid in-depth projections have been made to predict the effect vertical divestiture would have on the marketing sector of the oil industry	2074–75
The integrated oil companies do not control sufficient retail outlets to market their refinery output and have encouraged small firms to enter the marketing field	2075
The major oil companies are gradually relinquishing their position in the retail market to independent jobbers. Federal law requiring conservation of gasoline will intensify this struggle for survival over the next decade, requiring a substantial adjustment by independent marketers	2075
Expressed concern that vertical divestiture will force the major oil companies to adopt mass merchandising techniques, thereby eliminating the independent marketer	2075
Statement of William B. Wrench, president of Potomac Oil Co., Springfield, Va	2075
The survival rate on "scratch jobberships" in metropolitan areas is practically non-existent	2076
Believes that S. 2387 is one of the biggest threats to the survival of the independent jobber	
Mr. Singletary pointed out that with the passage of the new energy bill, there will be a surplus of refinery capacity among the major oil producers. The oil companies will have to come to the independent jobber in order to get rid of their product	2076 2077
Mr. McGinley stated that the only time his company had difficulty obtaining oil supplies was when the Federal Government entered into the regulatory business in 1973	2077
Under divestiture, the major oil company will both supply and compete with the independent jobber in the marketplace	2077
In response to questioning from Senator Hruska, the three witnesses maintained that gas wars still exist in their business	2077
Senator Hruska welcomed a panel of four witnesses representing the Southern Caucus, a federation of seven petroleum marketing associations within seven southern States. The panel: J. W. Adams, Charles Jackson, Pat Green, and John Johnson	2079

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Statement of J. W. Adams, III, treasurer, Adams Oil Co., Macon, Ga. 2079
The Southern Caucus represents 2,000 petroleum marketers who are engaged in the wholesale marketing of petroleum products. The members handle 60 percent of all the gasoline that is consumed in these States and 85 percent of the heating oil 2079
The function of the jobber, whether he supplies a brand name or an unbranded name, is to supply the capital, the knowledge of local market conditions, and to respond to the customers' needs on the level that best meets their demands. Because of these conditions, the major oil companies have constantly competed for supply relationships with jobbers 2080
Recent Government intervention in the oil industry has caused an erosion of this competition and any effort to break up the supplying companies will result in less competition 2080
The jobber has the freedom to sell branded or unbranded gasoline and, until the FEA came into existence, had the freedom to choose from any supplier that he wanted to 2080-81
Under divestiture, the jobber has no assurance that he will have adequate supplies or that the supplying companies will continue to bid for the privilege of supplying his operation 2081
Congress should be particularly hesitant about tampering with a stable economic system 2081
It appears that the primary purpose behind S. 2387 is to use the force of Government to punish the oil industry 2081
Urges Congress to return capital incentives to the marketplace by removing price controls 2082
Statement of Charles R. Jackson, president of Jackson Oil Co., Inc., Cheraw, S. C 2082
The major oil companies cannot afford to service the rural markets 2083
The relationship between the jobber and the supplier provides the jobber with certain benefits, including: the assurance of a supply of a quality product at competitive prices; a national advertising program; a national retail credit card program; the supplier has provided financing for expansion projects and credit terms for product purchases; and assistance in business counselling 2083
Expresses concern that S. 2387 may gravely jeopardize the economic viability of the small company and may do irreparable harm to the business of the small retail dealers 2083-84
Asks the question, if given divestiture, who will supply the small distributor in the rural markets 2084
Believes that the cost of oil supplies will increase by the amount of cost savings that present vertical integration provides 2084
Expresses fears that giant chain operators will enter the rural market, resulting in fewer companies being able to operate in the marketplace 2084
The result will have a direct effect on the retail dealer and the consumer 2084
Statement of Pat Green, Jr., petroleum jobber from Collins, Miss., which closely follows the testimony of Adams and Jackson 2085
Statement of John R. Johnson, president of Johnson Oil Co., Inc., Morristown, Tenn. In his testimony, Johnson reflects the opinions of his colleagues 2087
In his response to a question from Mr. Bangert, Mr. Green stated that divestiture of any kind, even if limited to the production and pipeline stages of the petroleum industry, would add large increases to the expense of marketing 2091
Mr. Adams, under questioning by Mr. Sneedon of Senator Thurmond's office, maintained that, under divestiture, competition in the oil industry would be eliminated 2091
Mr. Green, in answering Mr. Sneedon's question, expressed concern that vertical divestiture will bring further Government regulation 2092-93
Summary of prepared statement by Profs. William A. Johnson and Richard E. Messick, George Washington University's energy policy research project, Washington, D.C 2093
Testimony is based on a larger study, "Competition in the Oil Industry," recently prepared by the university's project 2093

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Legislation requiring divestiture of the oil industry rests on three premises: that the oil industry is not workably competitive; that the only way to remedy the lack of competition is through divestiture; and that the FTC and the courts are incapable of dealing with the antitrust problems of the oil industry. Therefore, a legislative shortcut is necessary	2094
Mr. Johnson states that, in the project's view, all three premises are wrong	2094
The project has found that many of the alleged anticompetitive practices of the oil industry can be traced to the effects of Government regulations and are not deliberate anticompetitive behavior	2094
Concern is expressed for the ramifications of divestiture on U.S. foreign policy. The project contends that, during the last Arab oil embargo, the vertically-integrated, international oil companies were able to shield the United States from the full effects of the embargo. One reason for this is because most of the companies have downstream investments in the United States. Under divestiture, the companies would have to abandon these investments and, should another embargo occur, it is doubtful these companies would have the ability to shield the United States from future shortages	2094
Companies with overseas holdings may choose to abandon some of their operations in the United States under a divestiture order	2094
Divestiture would make the domestic oil industry less competitive and force higher prices upon the consumer	2094–95
Judicial resolution of the divestiture issue will take years; therefore, investors are likely to show less interest in the oil industry	2095
In response to questioning by Chief Economist Walter S. Measday, Dr. Johnson asserted that, with divestiture, each of the divested segments of the oil industry may experience duplication of management, thus causing "a profits on profits" environment	2099
Dr. Johnson expressed the sentiment that the removal of FEA regulations on customer relationships would allow the major oil companies to move further in the direction of marketing their products through independent jobbers	2100
In questioning Dr. Johnson's assertion that there have been 30 new entrants into the oil refining business since 1950, Dr. Measday argued that most of the entrants acquired existing refineries	2101
Summary of Prof. Edward W. Erickson, department of economics and business, North Carolina State University	2102
The U.S. oil industry is not an industry that falls into the category of oligopoly or monopoly	2102
Erickson agrees with the assumption that enforcement of antitrust laws can contribute to reducing prices	2102
Erickson disagreed with S. 2387's declaration of policy, which states that "the existing antitrust laws have been inadequate to maintain and restore effective competition in the petroleum industry"	2102–03
Over 20 highly competitive firms would be affected by S. 2387	2103
The U.S. petroleum industry has demonstrated over a long period of time a record of profitability that is consistent with effective competition, and therefore, consistent with the proposition that prices equal long-run marginal costs in the industry	2103
Oil profits are substantially less than the profits of industries in which there may exist some element of market power	2103–04
Nonintegrated firms have to earn a higher rate of return than integrated firms and the variance associated with higher rates of return is greater as well	2104
A lower bound estimate of the yearly annual capital cost associated with divestiture, using 1974 dollars, would be $500 million. Mr. Erickson based his conclusion on the net investment in the industry in 1974	2104
Other potential sources of cost increases include the trauma of divestiture, increases in transportation costs, increases in inventory costs, potential increases in working capital costs, and other factors such as security of supply, the general level of economic activity, and inflation	2105
Erickson explained that the White House estimate of Louisiana's offshore oil production as 350,000 may be inaccurate	2105–06

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Oil companies could use maximum producing rates (MPR's) and maximum efficient rates (MER's) to restrict output, but studies have shown that there is too much instability in the yearly production figures to warrant charges of anticompetitive activity	2106
Erickson interprets control, as defined in section M of S. 2387, to mean substantial or long-term contractual relations, without which industry costs will rise substantially	2107
Erickson stated that horizontal diversification of oil companies into other aspects of energy supply is not a problem	2107
Dr. Measday commented that the subcommittee staff's report on offshore oil production did not charge that the major oil companies were engaged in collusion to withhold domestic production in the offshore areas	2107–08
Erickson asserted that the current ceiling of $5.25 on old oil may not be enough of an economic incentive to make the oil companies invest in offshore production	2108

JANUARY 30, 1976

Senator James Abourezk, presiding, called the subcommittee to order and welcomed Dr. F. M Scherer of the Federal Trade Commission	2131
Statement of F. M. Scherer, Director of the Bureau of Economics, Federal Trade Commission, summarizes his prepared statement	2131
[Prepared statement]	
As a co-author of "The Economics of Multiplant Operation," Dr. Scherer discovered that in most industries, the leading firms operate multiple plants and owe much of their overall size to their multiplant posture	2138
The size of the leading U.S. petroleum refiners is attributable in significant measure to multiplant operation	2138–39
Most refineries of the big eight oil corporations have been built at scales considerably smaller than 200,000 bbl/day because of limited market absorption potential and/or because the cost savings from operating larger facilities would be more than offset by increased product transportation costs	2139
Workers satisfaction with their jobs declines as the size of the plants increases. Job satisfaction is particularly low in plants with more than 500 employees—a mark surpassed by 56 domestic refineries in 1967. Employers evidently compensate their workers by paying premium wages	2139–40
Multiplant operation offered certain economic advantages under the conditions existing in the U.S. petroleum refinery industry as of 1970. One conclusion was that a firm operating only one refinery experienced anywhere from a very slight to moderate price/cost handicap relative to a firm enjoying all the benefits of multiplant operation	2139–40
Among the perceived advantages associated with multiplant size, four appear to be of paramount importance: those involving vertical integration into key inputs (notably, crude oil production), optimal ininvestment staging, access to capital, and advertising and image differentiation	2140
Single-plant refiners might suffer significant crude oil access difficulties, reflected either in a price squeeze or the inability to obtain adequate crude supplies in a tight market	2140
FEA regulation has lessened the danger of a crude oil price or quantity squeeze on nonintegrated refiners. The rise in crude prices and further depletion of inland reserves have escalated exploration costs and risks. The abolition of percentage depletion has removed the principal inducement to squeezes on nonintegrated refiners	2140–41
The more prone input markets are to a breakdown of price competition, the stronger is a firm's incentive to integrate upstream	2141
Refiners might prefer the security that integration into crude oil production confers. If integration were permitted under reorganization, the risks of offshore and Alaskan slope exploration would be severe and perhaps prohibitively high for a firm of efficient single-refinery scale. One possible solution is joint exploration ventures, but this might lessen the likelihood of achieving workable competition	2141

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A FTC study on Federal energy land-leasing policy concluded that the bonus bid system used for offshore oil tract leasing had magnified the risks and capital barriers to the independent entry of smaller producers. Alternative leasing methods were proposed which would reduce exploration risks and encourage small-firm exploration	2141
By declining to provide tax immunities for crude oil production, by reforming Government oil land-leasing policies, by deconcentrating existing crude oil reserves, and by discouraging joint crude exploration and production ventures, it would be possible to eliminate most of the integration advantages multiplant refiners have enjoyed over single-plant firms	2141
To the extent that horizontal and vertical reorganization improves the workability of product market competition, the incremental investment phasing advantages associated with multirefinery operation will be rendered less important	2142
The capital-raising advantage of a petroleum firm with assets of $30 billion over an equally integrated firm operating one 200,000 bbl/day refinery would be somewhere between 0.3 and 0.6 cents on the incremental petroleum product wholesale sales dollar	2142
If the leading oil companies were broken up horizontally, they would no longer be positioned to sell gasoline in all or most parts of the United States. Therefore, they would lose the brand recognition advantage	2143
Dr. Scherer's study concludes that the advantages enjoyed by large multiplant refiners over efficient single-plant firms have been modest in the past, and they would be even less significant if competition in crude oil production and refined product sales were enhanced through structural reorganization	2143
The feared social costs of petroleum industry reorganization ought to be only a minor deterrent to congressional action	2143
Appendix: scale economies in petroleum refining	2143
[End of prepared statement]	
In answering a question by Senator Abourezk, Dr. Scherer stated that if crude oil markets were made competitive, the compulsion toward vertical integration would be minimized	2146
Dr. Scherer agreed with Chief Economist Walter Measday's contention that the security of supply for the vertically integrated firms reduces the security of supply and increases the risks for nonintegrated firms	2146
Responding to a question from Dr. Measday, Dr. Scherer asserted that increases in concentration interacting with such things as the prevalence of joint ventures and a gradual tightening of crude oil markets (as domestic reserves became depleted) have contributed to the increasing peril of nonintegrated refineries	2147
Scherer contends that as the main sources of supply have shifted offshore and in combination with the system of risks created by the bonus bidding system, all but the major oil firms have been excluded from offshore production ventures. This has led to a higher concentration of crude oil supplies	2147
Data shows that for every dollar spent on exploration in 1973, $10 was spent for bonuses offshore	2147
Measday and Scherer discuss certain aspects of Scherer's proposal for a two-step bidding process	2147–48
While Scherer agrees that the royalty bidding system does have the advantage of making entry for offshore drilling rights much easier for small explorers, he contends that vigorous bidding could force the explorer to abandon a known deposit because the amount of royalty he has to give out would be too high to justify production costs	2148–49
In answer to Senator Abourezk's question regarding the imposition of constraints on the amount of oil any given concern can find in order to insure the participation of smaller companies, Dr. Scherer stated that that alternative could be eliminated if a system is developed to minimize or reduce the front-end risks	2149
Smaller companies have found themselves compelled to buy into shipper-owned pipelines in order to assure that they would get equal treatment or that they would not be charged an excessive price	2149

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A Kahn/Dirlam study shows that, at the crude exploration stage, the prorationing system created incentives to overdrill and to put too much capital into drilling, so that the returns were essentially brought down to a lower level than they needed to have been	2150
During the 1950's and 1960's, overexpansion of gas stations, so that major branded stations were operating at low rates of capacity utilization, brought down the returns that otherwise would have been there	2150
Scherer contends that a restructured oil industry would probably be more vigorously competitive and bring about political and social advantages that cannot be evaluated in dollar terms	2151
Scherer noted that the companies that would emerge from a reorganized oil industry would be rather large companies, quite capable of conducting large research and development programs	2151
Senator Abourezk turns the hearing over to General Counsel Charles A. Bangert	2152
In responding to a question by Minority Chief Counsel Peter Chumbris, Dr. Scherer explained that his maximum 1-percent estimate for capital costs assumes both vertical and horizontal integration into the figure	2154
Scherer says he thinks S. 2387 can be improved upon	2155
If Scherer were redrafting S. 2387, he would provide broad guidelines suggesting a reduction in concentration at the crude level to some target level, a reduction of the extent of multirefinery operation at the refinery level to some certain level and a suggestion that no company be more than 35-percent crude self-sufficient	2155–56
While not advocating complete vertical divestiture, Scherer feels that it would be rather easy to carry out the splitting of shares and reorganization of bonds and stocks to permit a structure to come into being	2155–56
The Standard Oil case of 1911 is discussed	2156
In answer to a question by Mr. Chumbris, Dr. Scherer stated that the petroleum companies have very able executives at all levels of management who would rise to the challenge of creating an efficient reorganized petroleum industry	2158
Responding to questioning by Minority Economist Garrett Vaughn, Scherer restated his belief that there would be a better assurance of vigorous competition with some structural reorganization and some changes with respect to the allowability of joint ventures among major petroleum companies	2159
Mr. Bangert recesses the hearings	2160

FEBRUARY 3, 1976

Opening remarks of Senator John V. Tunney, presiding in the absence of Hon. Philip A. Hart, chairman of the subcommittee	2161
Explained S. 2761, a bill the Senator introduced on December 9, 1975	2161–62
Statement of Senator John A. Durkin, New Hampshire	2163
Statement of John J. Warren, Jr. of Manchester, N. H. The prepared text closely parallels the statement of Senator Durkin	2166

[Prepared statement]

The debate on divestiture is no longer a technical debate, but a political one which pits those who would cling to their laissez-faire against those who feel it is past the time when the Federal Government should assume its rightful, dominant role in setting the Nation's energy, economic, and foreign policies	2168
The Senator is concerned that there has been in the United States a riot of individualistic materialism, under which complete freedom for the individual turns out in practice to mean perfect freedom for the strong to wrong the weak	2168
With Senator Durkin is John J. Warren, Jr., of Manchester, N.H. For 17 years, Warren operated a two-pump service station under a lease-proprietorship agreement with the Citgo Oil Corp	2168–69
In February 1973, Warren learned from city building records that his station was to be torn down and replaced with a new three-pump station. The Citgo Boston office told him that he was being put out of business and that Citgo would operate its own grocery store/self-service station on the same site	2169

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On March 15, the Citgo field representative asked Mr. Warren to sign a release from his 1-year contract, backdated to February 28. Warren signed the release for fear of losing a $2,500 dealer deposit the company still held	2169
Warren's financial loss was about $8,000 from the change in company policy	2169
During the next year, gasoline in New Hampshire was informally rationed by station dealers to patrons waiting in lines two and three blocks long. One Citgo dealer complained to the FEA that his supply of fuel was being cut back while the new store on Warren's old site was plentifully supplied. Warren supplied the FEA with his sale figures during the 1972 test period. The evidence showed that Citgo was violating the law, but to date prosecution has not resulted	2169
In April 1973, Warren was asked to appear before a State House committee where lawmakers were considering legislation to protect independent service station proprietors. The panel consisted of five members who were either former employees or substantial stockholders in major oil companies	2169
The old Warren station, with three pumps, is doing twice the business at three times the profit for Citgo	2169
The total assets of Citgo are less than $3 billion, equaling barely 2 percent of the assets of the 20 largest oil companies	2170
In the 1960's, the Justice Department filed suit against Citgo for illegally acquiring the Jenney Co.'s gasoline retail outlets in New Hampshire and Massachusetts. After years of litigation, Citgo was divested of its Jenney holdings	2170
In 1974, the Attorney General of Maryland brought a similar suit against Citgo for violation of the State's antitrust statutes	2170
Six months ago, a House Investigation Subcommittee cited Citgo for shutting down some of its most productive wells for a 4-month period	2170
Senator Durkin feels that Citgo used the energy crisis to buy up its independent competition and force its own jobbers out of the marketplace	2170
Citgo is primarily an oil and gas extraction company, It has reached beyond its production interests by establishing refineries to turn its raw product into marketable commodities. It has established 6,800 retail outlets and purchased 8,800 miles of crude oil pipelines. It has also invested in natural gas liquefication plants and transmission facilities, a diversification only 2 of the other 20 major oil firms have achieved	2170–71
Citgo has amassed 10,000 acres of oil shale leases in Colorado and signed up for a quarter share in the Canadian tar sands development project	2170–71
The company has production and exploration operations in the North Sea, Iran, Indonesia, Argentina, New Guinea, Vietnam, Burma. the Philippines, Bahrain, Angola, and Malta. Citgo maintains a shipping subsidiary, known as Tankships, Inc. Other assets and holdings are mentioned	2171
The no-risk marketplace has spawned a faceless, unaccountable oligopoly that holds the economic fate of the Nation in its hand	2171
Vertically integrated and horizontally aggressive, the oil conglomerates have not only gained complete control of the process which brings oil from the ground to our cars, but recent news stories about mergers and acquisitions show that the oil companies would also finance cars and write auto insurance	2171
Senator Durkin cannot forget that Exxon, the Nation's largest oil company, refused to honor its commitment to supply the Sixth Fleet or that Gulf funneled thousands of dollars into the pockets of elected representatives	2171
The very size of the oil octopus militates against the ability of any one man or one board of directors or regulatory agency to be aware of each company's operations	2171
There is no competitive structure to the oil industry. Cooperation among rivals has led to the blurring of traditional market place relationships of classical capitalism	2171

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Senator Durkin calls upon the full Senate Judiciary Committee to report out a vertical divestiture bill before spring	2172
[End of prepared statement]	
Senator Tunney thanked Senator Durkin and Mr. Warren for appearing before the subcommittee	2173
Statement of Anthony T. S. Sampson, author of "The Seven Sisters," a book that deals with the international oil corporations and their relationships with foreign governments	2173
Concern is expressed regarding the relationships of the major oil companies with the Middle East, especially with Saudi Arabia, Iran, and Kuwait	2174
Over the years, the State Department has become less antagonistic to OPEC	2174
There have been two separate changes of policy that must be distinguished. It is one thing to decide that perhaps the right price for oil is the one that OPEC happens to have fixed. It is another thing to accept that the price of oil will continue to be fixed by a group of 13 countries	2174
Sampson has seen no convincing evidence that the big oil companies deliberately engineered the price rise in 1973 to increase their own profits and resources	2174-75
Sampson believes that the OPEC countries would have had difficulty organizing and maintaining their cartel if a few companies had not been dominant in the main producing countries. Now those companies find themselves in a position of being closer in their interests to the producing countries than to the Western consumers	2175
The partnership was planned and foreseen by the Arab oil producers in the aftermath of the 1968 Six-Day War	2175
The Arab Governments developed the policy of participation to insure that the major oil companies would still be bound to them by long-term contracts, attracted by preferential prices and by guaranteed access to oil	2175
Sampson quotes the Shah of Iran as saying that he would be willing to cut production in order to maintain current prices, but that the oil companies are doing it for OPEC	2175
OPEC derives its strength from the fact that its key members are dealing with a few giant companies who can guarantee their markets and help maintain their price	2176
The four oil companies who make up Saudi Arabia's Aramco have played a crucial role, not only in discovering and exporting the oil, but in developing the whole country	2176-77
The close relations between Aramco and the Saudi Government present a dangerous political position for the four Aramco partners in the long run	2177
The FTC's 1952 report on the international petroleum cartel is mentioned	2178
Sampson suggests that legislation be enacted to insist that oil companies should have a public director on the board, directly accountable to Congress	2178-79
If allowed to remain unreformed, the giant oil companies are likely to become an increasing embarrassment not only to Congress, but to the Federal Government as well	2179
Sampson is not convinced that vertical divestiture of U.S. companies will bring about lower oil prices	2179
Sees a strong case for legislating to prevent the companies from making long-term contracts with the oil producers, and for establishing a freer market at the production end	2179
A stronger case is made for preventing the same companies that are concerned with the worldwide distribution of oil from being the industrial partners of the producers in other activities	2179
Sampson submits that the U.S. Government, and other Western governments, deserve to have much greater competition in dealing with the producing countries than exists at present	2180
Believes that some members of OPEC may become increasingly aware of the strains of their own isolation from the Western consumers	2180-81

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In answer to a question from Senator Tunney, Sampson asserts that as long as the giant international oil companies have huge crude reserves within the United States, they will clearly have an interest in keeping foreign oil prices high, because they are bound to become more concerned with profits	2181
Sampson states that secrecy and the element of tightness between OPEC and the oil companies encourages confrontation and tension	2182–83
When asked by Senator Tunney if Iran felt that the companies were taking less oil because of political pressures from the State Department, Sampson replied that that was his understanding of the Iranian attitude at the moment	2183
The Iranian consortium agreement and the Saudi Arabian agreement were very carefully constructed in order to avoid taking too much oil from either country in order to maintain the balance between those principal producing countries	2184
In response to questioning by Senator Abourezk, Sampson said that when the producing countries nationalize their oil fields, there is nothing that the Justice Department's Antitrust Division can do to prevent those nationalized oil fields from forming their own agreements between sovereign states	2185
Responding to Senator Abourezk's inquiry into pricing, Sampson replied that greater competition may affect the price OPEC places on its oil. Sampson speculates that one or two current OPEC members may decide to sell oil more cheaply in order to boost production	2185
Answering a question from Mr. Chumbris, Sampson concluded that, in terms of greater competition and flexibility and because so many European oil companies have huge interests in the United States, an agreement on divestiture between the United States, European governments and European companies could be reached	2185
Responding to further questioning by Senator Abourezk, Sampson stated that it is his belief that joint ventures, particularly in the Middle East and in all OPEC countries, are against the consumer interest	2186
Responding to a related question, Sampson contended that there was a time when it was in the interest of the United States and the European governments to have very strong companies which could bully the Arab nations into accepting low oil prices. Now, the situation is turned around. The producing countries' interests are to make use of the integrated companies to make certain that they have the market and the outlet for the oil they are selling at a high price	2186–87
Mr. Chumbris analyzes how the oil companies became involved in the Middle East	2187
Mr. Sampson agrees with Mr. Chumbris' analysis, adding that the current preoccupation of OPEC is to make certain that they will retain their markets and outlets in the United States and Europe	2187–88
Sampson disagrees with (previous subcommittee witness) Mr. Tavoulareas' contention that outside America, the giant oil companies enjoy general acceptance	2188–89
Responding to a question, Sampson asserted that the main incentive for mergers, whether in oil companies or in other industries in Europe, has been for the last 10 years the need to compete with the American giants	2189
Senator Tunney points out that Congress has the ability to have substantial impact on the activities of BP and Shell in the United States because Congress does have the right to legislate a divestiture of their interests in this country	2189
In answer to a question, Sampson surmised that OPEC not only failed to devise its own prorationing system, but would not be able to do so in the future	2190
Mr. Sampson questions how far the Saudis will wish to bring their production down, because they have very ambitious plans for their own development	2190–91
Senator Tunney expressed the view that the OPEC cartel could not hold up if it were not for the international oil companies supporting it through allocating crude throughout the world and lifing crude from producing companies according to whatever secret formula they have developed	2191

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Mr. Sampson states that the underdeveloped world has suffered doubly because it has had to pay a higher price for oil and a higher price for manufactured goods	2192
Mr. Sampson agrees with Mr. Chumbris' contention that oil companies must show some loyalty to the producing countries as well as to their native country, but adds that a too heavy dependence on a multinational empire by a country can become extremely dangerous	2192-93
Mr. Chumbris inserts into the record an article from the New York Times, entitled "The Seven Sisters: Another View"	2193
In response to a question from Minority Counsel Garrett Vaughn, Sampson suggested that if joint ventures and long-term contracts were effectively limited, a more competitive situation would be created and perhaps make the price of oil more flexible	2194
Mr. Vaughn contends that divestiture would not prevent U.S. oil companies from maintaining their relationships with the producing nations. The companies would still be able to plan how much output they wanted to take from foreign oil fields and how much they wanted to ship to the United States	2195
Mr. Banta points out that the bill, as drafted, would prohibit a link between marketing and crude production	2195
Statement of Jesse M. Calhoon, president of the National Marine Engineers' Beneficial Association, accompanied by Stanley Ruttenberg of Ruttenberg, Friedman, Kilgallon, Gutchess, and Association, Inc	2195
Foreign operations form a major portion of the business for several of the major U.S. oil companies. Five of these companies produce more than 83 percent of their total crude oil and condensate production outside of the United States. More than half of their foreign production (52.7 percent) takes place in the Middle East	2196
Multinational oil companies have been aided both by the U.S. Government's conscious efforts to promote their interests abroad and by favorable U.S. tax policies	2196
The oil companies earned far more profits on their reduced equity interest in foreign oil in 1974 than they did on their 100 percent equity interest in 1969. While rising oil prices helped to increase profits, the most important factor was the tax credit. U.S. law allows them a dollar-for-dollar credit on their domestic tax returns for all foreign taxes paid	9196-97
Between 1972 and 1974, the average price of a barrel of domestic oil increased by just over 100 percent. Profits per barrel rose by more than 300 percent during the same period	2197
A JEC study noted that, in the first half of 1975, U.S. refineries ran at less than 85 percent of capacity, the lowest level in 20 years, except for the period of the Arab oil embargo	2197
Recounts the events of the 1950's and 1960's which led to the emergence of the OPEC cartel	2198
Under participation agreements (designed between OPEC and the oil companies), the companies turn over some portion of the oil they produce to the government of the country in which they are producing. Then they agree to buy back most of the participation oil at a price significantly higher than the payment which would have formerly been due on that oil	2198
With the assistance of the U.S. Treasury Department, the oil companies reached agreement with Saudi Arabia in 1951 to increase their per barrel payments, but to change them from a royalty, which is not tax deductible, to a income tax, which is	2199
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Section 904(d) of the Internal Revenue Code allows multinational oil companies to carry over excess tax credits for 5 years. These excess tax credits amount to at least 55 percent of the total foreign taxes paid by U.S. oil companies	2200

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An important element in the ability of the integrated oil companies to increase profits is transfer pricing, or charging themselves as much as possible for shipping costs. They do this by using an Average Freight Rate Assessment or AFRA rate	2200
The AFRA rate reflects shipping costs which are substantially higher than those experienced by the companies. Under present law, shipping income is largely tax-free	2200-01
Divestiture will break the cozy relationship between the multinational oil companies and OPEC, because these companies will no longer be able to provide a complete network for transportation and distribution of oil to the marketplace	2201
In response to Senator Tunney's question regarding current foreign oil profits, Mr. Ruttenberg asserted that, because the oil companies want higher profits and the oil countries are interested in cooperation, U.S. foreign policy seems to encourage the present system and override congressional actions to do something about foreign tax credits	2202
In responding to further questioning by Senator Tunney, Mr. Ruttenberg stated that divestiture would have an impact on developing some competition and in undermining the ability of OPEC to cooperate closely with the oil companies and, thereby, to maintain the current high price structure	2203
Responding to a question, Mr. Ruttenberg commented that oil company profits which fell off in 1975 are now beginning to show a return on investment, a return that will mean continued higher levels of profits in 1976	2203
Mr. Calhoon charges that unless the Congress tackles the divestiture issue, the U.S. consumer will be dominated for the rest of his lifetime by 7 oil companies and 13 oil-producing nations	2203-04
Senator Tunney recesses the proceedings. The subcommittee hearings will stand in recess until the call of the Chair	2205

VERTICAL INTEGRATION IN THE PETROLEUM INDUSTRY

WEDNESDAY, JANUARY 21, 1976

U.S. SENATE,
SUBCOMMITTEE ON ANTITRUST AND MONOPOLY
OF THE COMMITTEE ON THE JUDICIARY,
Washington, D.C.

The subcommittee met at 1:40 p.m., in room 2228 Dirksen Senate Office Building, Hon. Roman L. Hruska presiding.

Present: Senators Hruska and Mathias.

Staff present: Charles E. Bangert, general counsel; Henry A. Banta, assistant counsel; Walter S. Measday, chief economist; Patricia Y. Bario, professional staff member; William E. Kovacic, staff member; Catherine M. McCarthy, chief clerk; Peter N. Chumbris, minority chief counsel; Garrett Vaughn, minority economist.

Senator HRUSKA. The subcommittee will come to order. We will continue our inquiry and our study of the several bills, about seven in number, which would require some kind of vertical divestiture in the petroleum industry.

The chairman has designated for chairman of this afternoon's session the Senator from Nebraska, and I am glad to have stepped into his place, in view of his other duties in the Senate which require his presence elsewhere.

Our first witness is William P. Tavoulareas, the president of Mobil Oil. He is accompanied by George Birrell, general counsel, and Jerry Woods, who is vice president in charge of planning. Did I describe your capacities properly?

Mr. TAVOULAREAS. I think it's Larry Woods; otherwise it's all correct.

Senator HRUSKA. Very well.

You have filed a statement with the committee. It will be incorporated in the hearing record in its entirety. You may now proceed to testify in your own fashion, either by way of highlighting, or by way of reading the statement, if you wish.

Mr. TAVOULAREAS. I would prefer to read the statement.

Senator HRUSKA. Very well.

STATEMENT OF WILLIAM P. TAVOULAREAS, PRESIDENT, MOBIL OIL CORP.; ACCOMPANIED BY GEORGE BIRRELL, GENERAL COUNSEL, AND LARRY WOODS, VICE PRESIDENT IN CHARGE OF PLANNING

Mr. TAVOULAREAS. Mr. Chairman and members of the subcommittee, my name is William P. Tavoulareas, and I am president of Mobil Oil Corp. I am glad to have this opportunity to testify before you today, because I think I can shed some light on this issue of oil company divestiture which is pending before you.

Because so many unsupported statements have been made on the subject, I would like to begin with some facts about the oil business. It is a fact that the world's industrialized countries have based their growth on energy from abundant supplies of low-cost oil.

It is a fact that the United States has remained the world's greatest industrial power by relying on oil and natural gas for three-quarters of its energy supply.

It is a fact that oil, more than any other commodity, has helped Western Europe and Japan to emerge from the wreckage of World War II to economic prosperity.

It is a fact that all of this was made possible by an international oil industry which produced, refined, and marketed the oil, using a tremendously complex logistics system which got the right crude oil or product to the right customer at the right time.

It is also a fact that the international oil industry has greatly changed in the last 2 years. While the oil industry still retains its worldwide transportation, refining and marketing facilities, a significant proportion of the world's crude oil reserves is now directly owned by producing-country governments. These governments have also clearly demonstrated their ability to raise prices without consulting either oil companies or consumer-country governments, to cut back production when it suits them, and to deny oil to consumer countries whose policies they do not like.

It is also a fact that oil companies recorded far higher profits than usual during the embargo period, giving rise to an "oil industry conspiracy" theory among a public that read about profits in newspapers as it stood in line for gasoline at much higher prices. I will have more to say about profits later.

All of these developments have had the double effect of depriving the oil industry of much of its control of oil production and at the same time increasing suspicion of oil companies in the industrialized countries. Consumers see only that prices go up, and blame the nearest target, the oil companies.

Governments are concerned that they have no weapons to break the control of oil prices by the Organization of Petroleum Exporting Countries, the world's most successful cartel. The result is general frustration and a desire to strike out at someone.

The present moves to dismantle the oil industry in the United States stem at least in part from the frustration. But emotion is a poor guide to action. We need to look at the issues clearly. If we do this, we will be able to talk to each other, instead of past each other.

Let us begin with the issue of concentration. The oil industry has been accused of being a monopoly, whatever that means. Some facts, of course, are not in dispute. Here are some of the main ones:

The largest domestic crude producer accounts for no more than 8 percent of U.S. output. The largest refiner has 8.3 percent of total U.S. refinery capacity. The largest gasoline marketer has 8.2 percent of the business.

I might add that, in the foreign area, no company has more than a 13-percent share of crude producing, refining, or marketing. Worldwide, my own company has 5 or 6 percent of the world market.

These facts do not describe a concentrated industry, as I understand that term. By comparison, we should examine concentration in commercial television, which is dominated by three networks, or look at the automotive industry, where one company has half of the market for U.S.-made cars. Look at aluminum. Look at steel. Look at computers.

But rather than look at nationwide concentration ratios, another interesting way of measuring the realities of concentration is to stop and think about the businesses which we come into contact with every day. Most of us have the choice of at least four or five different oil companies when we purchase gasoline. At some intersections, there is a different company on every corner.

By contrast, how many supermarkets do you have to choose from—two or three? How many drugstores are there in our community? How many newspapers?

Indeed, at the retail level, most of the comments I hear criticize the large number of service stations available to the public. I must say I don't hear communities complaining because there is insufficient oil company competition for the customers' business.

Indeed, most people who seriously accuse the oil industry of being concentrated really seem to be complaining that the industry is large. In truth, there are many large companies in the industry.

But it is not true that presence of large companies prohibits smaller ones from entering the business and prospering. So-called "independent" companies have, in fact, done very well.

Independents have shared in four out of every five winning bids on tracts for offshore lease sales. Ten companies which were not in the refining business at all in 1950 had refineries with capacity of over 50,000 barrels a day by 1973. Independents increased their share of the U.S. gasoline market from a quarter in 1968 to a third in 1975, a really significant achievement.

In spite of these facts, there are still some critics determined to make the oil industry into a monopoly, even if they have to count up to 20 companies before they can make the charge stick. What the words "20-company monopoly" mean, I have no idea. Perhaps it is best to leave it as a mystery.

If monopoly is one myth, high oil company profits are another myth which has helped give rise to the divestiture movement. Let's now look at profits. More accurately, let's look at the oil industry's rate of return on investment.

In the whole period, 1960 to 1974, the oil industry's rate of return on shareholder's equity, the measure of what the shareholder earns on the money he has invested, was 12.3 percent. This was roughly equal

to the average return on all American manufacturing. The rate was significantly lower than that for soft drinks, drugs, medicines, soaps, cosmetics, office equipment, tobacco, and other industry groups.

The year 1974 was indeed abnormal, and it is therefore important to understand why oil industry earnings were higher in that year.

Mainly, the profit increases were due to the so-called inventory profits. When OPEC raised oil prices, the value of a barrel of oil in storage increased by a factor of four or five times. But these increases did not give the company any money it could use, because it had to replace any barrel of oil taken out of inventory with another barrel of oil at a new, higher price.

Yet the same amount of oil was in storage and its cost was now $12 to $15 a barrel, rather than $3 to $4 a barrel. The price increase produced substantial reported profits which resulted in cash tax payments, while the new high-cost inventories represented a further cash outlay. In short, with the same number of barrels of oil in our tanks, there was a cash drain and we also suffered public criticism for what some have called "obscene" profits.

If you eliminate inventory profits, 1974 profitability was not out of line with the rest of industry even in that year. I should also point out that oil company profits dropped considerably in 1975. Costs of raw materials and supplies went up. Companies battled against inflation, higher taxes resulting mainly from loss of percentage depletion, and Government regulations and controls.

The profits of 34 companies analyzed by the First National City Bank dropped by over 30 percent in the first 9 months of 1975, the latest figures we have, compared with the first 9 months of 1974.

Between the first 9 months of 1973 and the first 9 months of 1975, a 2-year period, those same 34 petroleum companies increased earnings by only 9 percent, a gain of roughly half the rate of inflation during that period.

Surely, in view of the evidence, there can be no more concern about obscene profits as a motive for dismantling the oil industry.

If the oil industry is not highly concentrated relative to other major industries, and not highly profitable, what is the true concern behind this legislation?

Let me suggest that, in part, it stems from the fact that many oil companies are very large. The industry itself is immense. The 29 oil companies analyzed by the Chase Manhattan Bank have assets of about $193 billion. Yet, we often forget that a sizable part of these assets are overseas, and represent investments made to serve markets totally outside the United States.

In the case of the 29 companies, those assets amount to $110 billion, or 57 percent of the total. Obviously, one of the ways to reduce the apparent size of the U.S. oil industry would be to force it to give up its foreign assets.

I really wonder if anyone seriously believes that such a result would be in the interest of the United States and its policies. But I would submit that size in itself is no reason for breaking them up. In fact, the Nation, and particularly the consumer, has a vested interest in not dismantling the oil industry as we know it.

Mainly, it is a question of money. Consider some of the figures. Mobil recently spent $350 million for a single producing platform in the North Sea, I should say, Mobil and its partners. Structures of the

same or greater cost will likely be required to exploit areas off North America. A new refinery of competitive size could cost up to $800 million.

Big companies make huge investments to hold down unit costs. If they could not afford to do it, the alternative would be either no supplies, or supplies at a much higher cost.

Let us take a look at what might happen if integrated companies were broken up into segments. If all the segments are to survive as independent entities, each will have to earn an adequate rate of return. In particular, this would be true of the refining and marketing segments of the business.

I leave it to your judgment as to what rate of return is adequate. Pick the figure you think fairest, because I am certain that, whatever the figure you pick, it would be much higher than we at Mobil are making.

Mobil lost money on the $2.8 billion of domestic refining, marketing and transportation assets in the first half of 1975, and only began to break even in the latter part of the year.

In 1974 the situation was even worse. But the point is obvious. Any refining or marketing company which was spun off from an integrated company, would have to make a much higher profit than the integrated companies are making today in these sectors.

And it could only make that profit by charging the consumer higher prices. On the face of this, the producing segment of the industry would appear to be the most profitable of all. This attractiveness arises only because past crude oil discoveries are being liquidated at today's prices.

Point of fact: New exploration in many of the difficult offshore areas would not be profitable at the controlled crude oil prices which have just been enacted.

Thus, even producing companies which have only a limited period of attractive profits, if they continue to explore for oil to be sold at today's profits.

Now, let us look at the subject of pipeline divestiture. Because of the large capital requirements, the low rate of return, the inflexibility of the system, once constructed, independent companies have not stepped forward to build new pipeline systems. Certainly, there is a flood of pipeline companies wanting—there was no flood of pipeline companies wanting to take the risk of investing in the $6 to $7 billion Trans-Alaska Pipeline. That pipeline was built solely because companies exploring on the North Slope had to build one to get the crude out.

And independent pipeline investors failed to come forward for two reasons. They did not have the money, and if they had, they could have found more lucrative and safer places to put it.

In other areas, too, such as the Gulf of Mexico, major companies have no choice but to build these lines to get crude oil to their refineries. Even though rates of return are low, even though the pipelines have only a limited life because they are useless once the crude oil they carry is used up.

Let us look at research. An integrated company with capital available for research can put sums of money to work in areas where the need is greatest—at one time in exploration and producing,

another time in refining. In Mobil's case, we lead the industry in the development of ziolitic catalysts—which are used to increase the gasoline yield from a barrel of crude oil, which greatly benefited the American motorist. We have also put large sums of money into improving seismic detection techniques which considerably improve our chances of finding oil.

If our own Government is not convinced of the value of our research, it is ironic that the Russian Government has for some time been attempting to purchase American private companies' know-how for application to its own oil industry. This is a significant example of the inability of centralized government planning of the kind practiced in the Soviet Union to conduct exploration and production as successfully as our own private companies.

Let me talk briefly now about the function of size in our international operations—again as this relates to the U.S. consumer. Look back at the 1973–74 embargo period. When the Arab nations cut off oil supplies to the United States, the large oil companies utilized their worldwide logistics capability to move more non-Arab oil into the United States and move Arab oil to countries which were not embargoed.

As a result of these efforts, the effect of the embargo was much less than it might have been. This total industry effort to allocate supplies took place at a time when consumer nations could not agree on a coherent policy, and was given high praise by both the Federal Energy Administration and by the European Economic Commission which exhaustively investigated the companies' behavior during the embargo period. But perhaps the best measure of our success was that we so cushioned the blow to the United States that millions of Americans still believe there was no real crisis. If we had not been so efficient, we might have been in a better political position today.

In international operations, size is vital, and it is essential if the American consumer is to continue getting supplies. Whatever action the U.S. Government takes will not alter the fact that the Royal Dutch Shell group and British Petroleum operate overseas, and you can be sure they stand ready to pick up any pieces which may fall to them as the result of legislation here.

It is therefore especially surprising to note that there is now a theory making the rounds that the United States will actually be better off if it breaks up its major oil companies, because OPEC is able to maintain its grip on crude prices only because it has a subservient network of oil companies to market its oil.

Let me say bluntly this kind of thinking is exactly 180 degrees off target. There is no denying the fact that OPEC controls the crude supply. Yet the international companies, with their refineries and markets around the world, afford the consuming countries the very source of supply of crude oil and products. No single country could develop such access on the basis unfettered by political considerations. Many foreign countries, such as Japan and those in Western Europe, recognize the value which the international oil companies represent, and work with these companies instead of against them. Britain, for example, utilized the expertise of the international oil companies to find oil in the North Sea, and that nation will be self-sufficient in oil in the eighties. To sweep away all of that and replace it by a host of dismembered companies will not produce a better value for the United

States; quite the reverse is true. The basic fact we have to live with is that until we can substantially reduce our dependence on foreign oil, we will have to pay the OPEC price for imports. No policy of splitting up the oil companies is going to help the consumer.

Indeed, from all the considerations I have mentioned, the American consumer would have to foot an immense bill for divestitue, in return for absolutely nothing at all, or, more accurately, in return for the privilege of paying more for far worse products.

In preparing to testify before you today, I reviewed some of the testimony which this committee has received, and was struck by the fact that the proponents of this legislation have not attempted to lay down a blueprint of the consequences of this legislation. Such a blueprint is particularly essential, for we are dealing with a situation which is unusual in American practice. When divestiture is ordered by decree of the court following a judicial conclusion that the antitrust laws have been violated, the lawbreaker has little basis to complain that his business is being disrupted. Yet here there has been no finding that the law has been broken, and indeed the long years of activity by the Justice Department and the Federal Trade Commission strongly suggest that quite the opposite is true; instead, dismemberment can apparently be accomplished only by affirmative legislation. In those circumstances, it would seem to me especially incumbent on the proponents of the bill to state explicitly what they hope to accomplish:

Do they hope that the price of foreign oil will decline when a host of smaller American companies compete with the foreign giants for scarce supplies of foreign oil?

Do they, on the other hand, hope that the price of gasoline will decline at the service station when a host of American companies have to earn a reasonable rate of return, even though it is meager, on the tremendous assets involved in marketing?

Or do they hope that the price of oil will decline when smaller American refining companies have to build 50,000-barrel-a-day refineries rather than 150,000-barrel-a-day refineries because they do not have the capital resources to make the larger investments?

Or possibly do they hope that supplies of oil will increase and its costs will come down when independent pipeline companies provide pipeline transportation only after the reserves to support the line are fully developed and when the financial institutions are convinced that the accumulations are large enough to make the pipeline viable over its useful life?

I cannot give positive answers to any of these questions. I do not know whether the other witnesses you will hear can do better.

Alternatively, divestiture would simply become a back door to nationalization of much of the industry. As we all know, Government control of industry means redtape, it means bureaucracy, and above all it means higher prices, as a recent comparison of private international oil companies and Government oil companies has amply demonstrated.

This last point is one that worries me a great deal. I do not think that the honest, though misguided, proponents of divestiture see it as a roundabout way to Government control of the oil industry. But there are those who would see the failure of American industry to find and produce needed supplies as a welcome assist to their advocacy of

enforced conservation and increased Government intervention in oil exploration and production. The fact that an industry dominated by big Government would be the result, is the ultimate irony for all those who are now concerned that oil companies are too big.

To sum up: Proponents of divestiture have, to my knowledge, produced no evidence that it would benefit the country. On the contrary, they have at best suggested a method of weakening the oil industry when a strong oil industry is desperately needed to raise the billions of dollars in capital requirements that will be needed to improve our energy self-sufficiency, and to reduce instead of increase our vulnerability in an emergency, whether it is another embargo or a war in which the United States is involved.

By long years of service, American oil companies have demonstrated that when governments do not suffocate their enterprise and efficiency, they can supply customers around the world with excellent products at reasonable cost. I hope we can continue to do that job.

That completes my statement, Senator.

Senator HRUSKA. Thank you, Mr. Tavoulareas.

In your prepared statement, you indicate that the producing end of your business has only a limited period during which it may earn attractive profits.

Would you give us your best estimate of how long a period this would be and why it is a relatively finite period?

Mr. TAVOULAREAS. Unfortunately, if we examine the amount of crude oil reserves proven in the ground in the United States, we find those declining, and production, therefore, declining at a rate of between 6 and 10 percent a year.

So that our big reserve base is rapidly declining. Our only hope, therefore, is to increase this base by looking elsewhere. And elsewhere, we are prohibited from looking, and the cost will be greatly in excess of the cost of old oil.

So I would say, when you deal with something as important as energy, a depletion rate of 6 to 10 percent is very alarming.

Senator HRUSKA. Only recently, Venezuela took over the private oil companies within its boundaries. There have been some opinions and analyses that have indicated that when that is complete—and it is now complete, since the first of the year—that Venezuela will be engaged in what they call "Operation Liquidation."

Could you explain that to us a little bit? What it is and why it would happen that way?

Mr. TAVOULAREAS. The key to the business of finding reserves is taking tremendous exploration risks. You look around the world; maybe one in eight wells is successful.

We have an example in Algeria, wherein they now run the oil industry. They took it over about—I guess, about 5 years ago.

And, each and every year, when they come to face the facts in the political system of spending those millions of dollars on exploration, the results of which are 7 or 8 years in the future, they just don't seem to get around to spending that money.

So you've got to have two things: You must have the guts to spend the money, which doesn't come very naturally to a political body, and you're got to have the potential for finding reserves.

We find that government operations rarely are willing to spend money today for benefits 8 or 9 years hence.

And, in the case of Venezuela and Algeria, the potential for new findings is not too great, besides their monetary restrictions.

Senator HRUSKA. Was it in Algeria or was it in Libya that, when nationalization occurred—and that's some 4 or 5 years ago—that, since that date, the governments there have been trying to call into service of their country, technicians who formerly serviced the privately owned companies, so that they would engage in that research and convert an Operation Liquidation to, at least, a longer period of liquidation, rather than a shorter period? Which of those countries—maybe both of them?

Mr. TAVOULAREAS. It's certainly Libya. It is now—it's Algeria; it is Libya—it is now coming to pass in the Middle East.

It's easy to nationalize success. Now, how do you continue success? Well, they found out they don't have the know-how. So you're finding out, after the period of nationalization or takeovers, we're being invited back by most countries to give them a service, our technical know-how, to look for oil.

And this is the key strength we have, and I think it's one of the most important points to understand in this whole divestiture procedure.

What I think we want in the United States is ample supplies of oil, in and outside the United States, and we want low costs.

Now, as you deal with these foreign governments, we are finding out that our leverage is twofold: Our know-how, our exploration and development know-how, including our money, and our markets.

If you break up the American oil companies, I don't know what leverage you have, what service you can perform for these countries to get back in there to be assured of continued supplies.

So, one by one, each one of these countries are inviting us back in. We already have a new exploration program in Libya. The Algerian Government has been after us many times to come in for new exploration programs.

I won't be surprised to see it happen in Venezuela in the next year or two.

Our secret for staying in the Middle East, the key is our ability to perform a service for those countries in areas where they do not have know-how, and our ability to dispose of their crude.

And, if you break up the American industry, I don't know who is going to perform that. Will a refining and marketing company in the United States, after a breakup, be able to perform a producing service to a foreign country in order to assure America of supplies in times of emergency? That just won't happen.

Senator HRUSKA. This talk about nationalization was inserted at this point with malice aforethought. You said in your testimony that: Divestiture will simply become a back door to nationalization of much of the industry. Now, this suggestion is contrary to the statements made by certain members of this committee who are proponents of the proposed legislation. They claim that they are for divestiture, so that the industry will not be nationalized. Would you care to comment on that?

Mr. TAVOULAREAS. Let me give you some examples of what has happened in a foreign area.

We had a very viable industry, and, little by little, the governments moved in with more control, and finally took over all aspects of

operations, taxes, prices, et cetera. And, in the case of both Algeria and Venezuela, they brought it down to a point where the profitability is almost nonexistent. At that point, they said, "Now, we want to buy your assets."

So, in other words, they took the viability away from the industry, economic viability, and after they did that, they said, "Now, we want to buy the assets for book value."

And I think that is what you are going to find happens; either parts of the industry will be not viable or, to make them viable, they will have to have tremendously increased prices, and that will only hurt the consumers.

So I see this as a stepping point toward nationalization.

Senator HRUSKA. Now, here in this country, we have built big business. You pointed out in your statement a number of examples. We've kind of prided ourselves about them, all except some people who are serving in the same body in which I am serving, who say that bigness is bad; that a parcelization of these big businesses will be better.

It has frequently been pointed out that even if we succeeded in that type of a program, that would not be the final answer because any legislation by our Congress here would not govern the foreign countries.

Now, what is the trend in foreign countries with reference to big business, and particularly with reference to the size of international oil companies? Have they encouraged a policy and a doctrine of many small businesses or have they gone the other way?

Mr. TAVOULAREAS. I think that they have mainly gone both ways. Most countries of the world continue to want to see small business flourish, but they surely do not want to wreck big business. As a matter of fact, the crisis was the best example we ever had of the performance of international industry. Prior to that time, a lot of foreign countries were talking about, "Well, do we really need these companies as much as we think they do."

After we went through the crisis and after they started experiencing going out and trying to buy oil, under the conditions that they thought they could buy it, we have seen a great resurgence of confidence in the big oil companies again. Every country I know encourages their own national oil companies in size. Britain has the British Petroleum Co. France has CFP and ELF. Italy has ENI. Germany has DEMINEX And Germany, time and time again, has asked us to help DEMINEX develop further.

So I see no tendency, on the part of the foreign countries, to break up the big companies. I think we are really appreciated more abroad than we are in the United States.

Senator HRUSKA. Has Great Britain tried to break up the Royal Dutch Group or the British Petroleum or any of the other companies?

Mr. TAVOULAREAS. I think Great Britain is a beautiful example of a government operating in a way, if they want to have ownership, they should operate. They have had majority ownership in British Petroleum Co. for a good number of years, but never interfered with its operations. They have made it toe the line and meet the criteria of other oil companies; no tendency to ever break up BP; no tendency, in either Holland or in Britain, to break up Shell. As a matter of fact, they are very jealous that the companies get equal treatment around the world.

Senator HRUSKA. In the instance of the development of the North Sea oil, had there been a series of small companies, instead of some of the larger ones, there would have been, presumably, only two alternatives: They could not undertake it at all or they would have had to assemble a joint venture of a number of these small companies, resulting in an entity that would be a big one.

Now, isn't that just about the size of many of the operations in which we will potentially, and in the future, engage, if we expect to enlarge the supply of petroleum energy?

Mr. TAVOULAREAS. The British Government follows the policy of inviting both, large companies and combinations of small companies into the North Sea.

What we have seen recently is, as discoveries are made, and these smaller companies, even though they are in a combine, have to face the expenditures like we had to do recently, in a $350 million platform—and our next platform will probably cost close to $500 million—they are starting to sell off some of their assets.

We have had a number of smaller companies in the North Sea come to us to help them finance their success.

So you're either left with a combine of small companies, and sometimes we have those combinations in the North Sea, ourselves, which is really a big company.

Senator HRUSKA. In different form, perhaps, in different structure, but, nevertheless, a big unit.

Mr. TAVOULAREAS. A big unit. I mean, what small company can afford a $350 million platform, followed by a $500 million platform, within a few years? We are talking about expenditures which exceed our total income in a particular year. We are spending money on platforms in the North Sea that exceed our total year's income.

Senator HRUSKA. We had testimony here, not too long ago, about the profits, not only the profits, but also the costs of pipeline services, and it was a phenomenally low percentage increase in the carriage per unit of either the crude or the finished product.

That is your observation, isn't it? Isn't that what the fact is, that through the last 30 or 40 years, there have been, per unit, a very small percentage?

How would that be affected if the pipelines were taken away from their present structure of ownership and operation and if each pipeline would have to stand on its own feet for its business and its development?

Mr. TAVOULAREAS. Pipelines, in almost every case, have been the most efficient means of transportation. As we saw, pipelines from the Southwest come to the Northeast, anything we could do in tankers. So they have proliferated and brought down the cost of oil to the consumer.

Now, what we have found time and time again, is that, when you get into an area where there is really no risk involved, you have independents that would like to build a pipeline. But, then, when you get into areas where there is a risk involved—Alaska is an example; we have some examples now in the Gulf of Mexico—where a fellow is not assured of getting his return over a long period of time because he is worried either about whether the reserve base is there or whether the environmentalists will allow him to produce the crude, we cannot find independents who want to build pipelines for us.

So I could not think of a worse time in history to introduce separate pipeline entities. We are building pipelines that we are building only because we are producers.

Senator HRUSKA. We have a basic bill before this committee. It is called the Industrial Reorganization Act, and it undertakes to define or describe a monopoly and, when that point is reached, then the provisions of this law will apply, and there will be a breakup of the companies who are involved.

The chairman of this subcommittee has introduced that bill. And there, the description of monopoly is: When four or fewer companies have 50 percent or more of the market.

Now, there is also a corollary to that, that if there is no price competition, other factors apply. But, in that broad general definition—and you may be familiar with the bill; I wouldn't put it past you—but, within the formula of that bill, is there any hope of reaching the petroleum industry—four or less companies possessing 50 percent or more of the market?

Mr. TAVOULAREAS. No. As I said in my statement, in producing, marketing, and refining, no one exceeds 8.3 percent, I think the figure was. So, even if you assume there were four at 8.3, it would only be 32–33 percent. So it wouldn't hit the oil industry.

Senator HRUSKA. So that bill is harmless, as far as the petroleum industry is concerned?

Mr. TAVOULAREAS. Well, it only proves that we are not a highly concentrated industry. That is what it proves.

Senator HRUSKA. Well, we have been studying hard industrial and economic concentration for the last 10 or 12 years in this committee. I do not think the study will ever be completed, but we are at it. And I would say that, historically, the figures which you have given are familiar to this committee, and it is one of the things which is well to remind us and to have in the immediate record, so that we can go by those facts which you have recited. Now, as to what might follow with certain legislation, that is something else again.

Mr. Bangert, have you any questions?

Mr. BANGERT. With your permission, Mr. Chairman, Mr. Banta of the majority staff has a few questions.

Senator HRUSKA. Very well.

Mr. BANTA. Thank you, Senator.

Senator HRUSKA. You may proceed.

Mr. BANTA. Mr. Tavoulareas, you say that it is your best judgment that Mobil lost money on its domestic refining, marketing, and transportation assets in the first half of 1975.

Perhaps you know Senator Hart has been engaged in correspondence with your company on this issue. A recent letter from Mr. Philbin of your company discussed studies which had been done to try to determine profitability of production, refining, and marketing.

It said, "While these studies convince us we have been losing money in the complex * * *"—"complex" referring to a downstream operation—"* * * for much of the past 2 years, we were never able to arrive at a figure sufficiently precise and accurate that we are willing to state exactly how great these losses were."

Can you tell us how long, prior to 1975, Mobil had been losing money in its downstream operation?

Mr. TAVOULAREAS. Well, I cannot remember how many years. Let me just, first, answer the first part of it.

We were not asked to give our losses for the complex combined. What we were asked to do was to give our profits for refining, separate for refining separate for pipeline.

Mr. BANTA. I understand that.

Mr. TAVOULAREAS. OK. What we said is we don't keep our books that way. So I want you to understand why we have been slow in replying. But we still are preparing a reply to see whether we can be responsive.

Mr. BANTA. I understand, and we appreciate the cooperation that you have given us.

Mr. TAVOULAREAS. Thank you very much. I can get those figures for you,[1] so I would rather not be held to what I have here.

I do not think that the rate of return in U.S. refining ever amounted to more than 4 or 5 percent in the period of time that I can remember, and I used to head the U.S. division back in 1968.

I would say rates of return more in the nature of 1 or 2 percent were what we realized in the complex for many years.

Mr. BANTA. For how long a period of time, sir?

Mr. TAVOULAREAS. I'd say at least 5 years. But I can get those figures for you—I am only relying on memory.

It has been an unprofitable part of the business for us.

Mr. BANTA. When did Mobil build its refinery at Joliett?

Mr. TAVOULAREAS. I guess we finished it in 1973, I think.

Mr. BANTA. How much money did it invest in that refinery?

Mr. TAVOULAREAS. I do not remember the exact figure, but I think it was somewhere around $200 million or $260 million. But I could get that figure for you, too.

Mr. BANTA. It was somewhere in excess of $200 million?

Mr. TAVOULAREAS. Yes; I think so. Yes; I will give you the figure. I will get the figure for you.

Mr. BANTA. What rate of return did Mobil expect to get from that investment?

Mr. TAVOULAREAS. We do our rates of return on a DCF basis, which is different from the rates of return you and I have been quoting.

I want us both to understand that. We were hoping to get somewhere between 8 and 10 percent because what we were doing there was combining—it did not mean that the refining and the marketing, per se, was profitable. It meant that producing a lot out of one location would be more efficient than producing a lot out of three locations. Furthermore, we thought locating a large refinery that could take the Canadian crude would be a good thing.

Now, we have been fooled on that because, obviously, the Canadian crude is not forthcoming. But I would say between 8 and 10 percent is what we hope we make mainly on a cost saving because having a refinery where the Canadian crude could hit refining and then go to the market was better than getting it in Texas and shipping it up.

Mr. BANTA. Are you telling me, then, that Mobil expected to make a lot more money in refining and marketing than it actually did?

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[1] Not received at time of publication.

Mr. TAVOULAREAS. I do not know if you know how things happen in big corporations. Almost any proposition a fellow proposes is always going to make a lot more, unfortunately, than we usually make. I have been telling the fellows in North American division every project that comes up here has a DCF of anywhere from 7—I have seen as high as 17 percent. Looking at the results at the end of each year, I never make it.

So we have slowed down our investments in the United States. We called off the expansion of the Paulsboro refinery as you remember, because we just do not see the profit there.

Mr. BANTA. But my point is you did expect to make more money?

Mr. TAVOULAREAS. I hope every time we make a capital expenditure we intend to make more money. I do not know why we would want to spend the money unless we did not earn some on it.

Mr. BANTA. Do you owe it to your stockholders to earn money on every investment you make?

Mr. TAVOULAREAS. We certainly hope we can make money on every investment. We certainly owe it to our stockholders, but we are not always successful. And many times we are not successful because of the marketplace; nothing that we do.

Mr. BANTA. Does Mobil know how much it earned on its investment on Marcor last year?

Mr. TAVOULAREAS. Oh, sure, we know how much we've earned on that. I can get the figures.[1] It is published.

Mr. BANTA. I just wanted to know if you knew.

Mr. TAVOULAREAS. Of course we know. It is a figure. That is easy.

Mr. BANTA. Well, at the same time, though, you are saying that you do not know what you earned at refining, at marketing, and at transportation.

Mr. TAVOULAREAS. No, I did not. I know exactly what I made on the complex. I know exactly what I made on Marcor because I keep my books that way.

That is different from asking me what I made on refining, separate from marketing, because I do not keep my books that way.

Senator HRUSKA. Mr. Banta, would you yield?

Mr. BANTA. Certainly.

Senator HRUSKA. Thank you very much, I do not want you to terminate your questioning, but my question bears on this method of bookkeeping.

Mr. Tavoulareas, you say you do not keep your books in such a fashion that you can give the profits on production, or refining, or marketing as individual units?

Mr. TAVOULAREAS. I did not, Senator. We can give the profit on exploration and producing separate from refining, marketing, and transportation. We have, in North America, two profit centers. One is producing and exploration; we can give you that profitability. We can give you the profitability on refining, marketing, and transportation together.

Senator HRUSKA. As a unit?

Mr. TAVOULAREAS. As a unit. And I can go through the many reasons behind that. It is just not arbitrary; there are many good reasons behind it. That is the way we keep our books.

[1] Not received at time of publication.

Senator HRUSKA. And is that way commonly used in the petroleum industry in large sized companies, or do they have their own way of segregation or bookkeeping?

Mr. TAVOULAREAS. I am not sure of all companies. Let me tell you this: We had a method of segregation for many years, and all we found out was we were playing with a transfer price between two segments of the company, and everybody argued all day long what the transfer price between refining and marketing ought to be. We spent more time arguing about that transfer price than going out to try to sell our product.

So it did not accomplish anything for our company to have that separate. Nothing at all. So we thought a more logical way to break it down was between exploration and producing, and the other segments of the business. I would say, if you had to ask me to guess, many companies keep it the way we do. But some companies do it the other way. The reason I say that is because, you see, some of the companies are formed that way in their organizational structure.

Senator HRUSKA. Have you heard of the line of business reports that the Federal Trade Commission is seeking to get?

Mr. TAVOULAREAS. Yes.

Senator HRUSKA. Is your company involved in that litigation?

Mr. TAVOULAREAS. Yes, we are.

Senator HRUSKA. Is this not one of the great difficulties of justifying that program? Item 1, in the first place, that there is a diversity among big companies as to how they keep their books? And item 2, regardless of what breakup they make, there is not uniformity?

Mr. TAVOULAREAS. Let me tell you what happens in a company our size. First of all, I dealt with the simple things—refining, marketing, transportation.

In addition to that, we have financing of a large company. We have overhead at headquarters. Now you get into the business of how you allocate those items, and find yourself going through a useless exercise. You are doing it, and when it is all finished, everybody argues on the method. In other words, the parent company goes out and borrows $300 million. How do I charge that to the various segments of the business? I have that kind of a problem. Then I have an overhead; I do not want to repeat overheads in each segment; a big overhead in marketing, a big overhead in refining, a big overhead and so forth.

So, for efficiency I have one looking over the three. Now, how do I start allocating that overhead? So, we have gone through this problem. And we said to ourselves, the most logical and efficient way to do it is the way we do it in our company.

And I imagine other companies come to different conclusions. And I think this is the basis of the difficulty we are having with the Federal regulators, and of course, in answering that letter.

I do not mind giving any investigator the results the way we keep them. But, unfortunately, we are getting so many questions from so many people who want the information in different ways that we have got hundreds of people working on trying to allocate things. And later on we find out, "Gee, it is not quite right. We made a mistake." And then, before you know it, you are pinned down to it. And it is causing a tremendous workload and tremendous inefficiency in the industry today; all these diverse requests.

Senator HRUSKA. I thank you, Mr. Banta, for yielding. You may proceed with the other questions hou have.

Mr. BANTA. Thank you, Senator. I hope, Mr. Tavoulareas, that you did not draw any conclusions from my questions, and that you did not think that I was implying that you were not cooperating.

Mr. TAVOULAREAS. Oh, no. I understood that entirely, Mr. Banta. I just want to explain to the other members of the committee why we had been slow in answering.

Mr. BANTA. On this subject, you make a great point in your statement that vertical integration of the industry is a cause of great efficiency. Now, without this knowledge of how much profit you are making at refining, at transportation, at marketing, how do you know that the integration is efficient and contributes to the greater efficiency? How do you know that a refinery that you are operating as part of your integrated system is more efficient than a refinery which was operated separately?

Mr. TAVOULAREAS. I can give it to you on each part. But let me first talk about the two big segments of the business.

I have a tremendous refinery system in the United States, around the world, and knowing I have some supplies in that refinery means I can supply my customers over a long period of time. That has to be efficient, because I am able, then, to enter into contracts on a selling side and contracts on a buying side, where I have security of supply which, as I am sure you understand, can be the greatest thing in order to level out costs.

So, I don't think there's any question that having exploration and producing, and refining, marketing and transportation as one integrated company, lends efficiency.

Now, let me now break down the other part of it. When you build a refinery, you have to know what you are building a refinery for. You could build your refinery for speculation. We have seen people in the tanker business build for speculation. As the market is high, they made a fortune; when the market is low, there is disaster.

I do not think it is in the interest of the shareholders, it is a very smart thing to build a refinery and not know where you are going to put the products, or build a market and not know where you are going to get the products.

So, this is why we put refining together with marketing. Our interest is to be sure we can refine and market products. We want to be sure we have the refinery that can supply the market, and a market that can put the burden on a refinery. Now, I call that efficiency, and I call that security of supplies. And I think you will lose a lot if you break that up.

The best example was during this emergency. We had refineries around the world, and we had crude around the world. We allocated that on an equitable basis to our customers all around the world. We further allocated it so that the non-Arab oil would go elsewhere—I am sorry, the non-Arab oil would go to the United States and Arab oil would go foreign.

Now, if I were not integrated, how would I have done that job?

Mr. BANTA. To what extent can long-term contracts provide security to supply?

Mr. TAVOULAREAS. Well, prior to OPEC's movements a couple of years ago, I would have said that it does—in the foreign area—I

guess you are referring to the foreign area, are you not? The domestic area, it is as secure as an American contract has always been. In the foreign area, it meant a tremendous amount of security. Now, we are finding out—because OPEC unilaterally changes prices, production rates, et cetera—we do not have the security we formerly had.

And I said before, what is the key to our security today? The key to our security—and overseas as well as the United States—we must perform a service that the people want. We will never last as a company in the United States if we do not serve the customers.

Overseas, we must have a service that the producing countries want. Just going out there and making a contract is not a service. Now we find that they want our technical know-how—the chairman referred to it later on—because they want to continue to explore, to be sure they have the assurance of supply over a long period of time, and they invite us to come in under a service arrangement.

That, to me, is one measure of security we have.

The second is, they are starting to realize now, because we have surpluses in the world, that the fellow who has markets is also very important for them. We have been reading in the papers the last couple of days where the head of one government is very excited because production went down, and you see how important it is.

So, the secret of security in the foreign market is that you can perform a service. I do not get the same comfort out of a contract any more in the foreign areas.

Mr. BANTA. I expect that after nearly 30 years of helping to build up the Saudi Arabian oil industry, you have just about written off your investment to Aramco; is that not correct?

Mr. TAVOULAREAS. Well, I think you are talking to the wrong company. As you know, we just got a larger interest in Aramco. Aramco is no different from any other company I see out there, except for the following:

Saudi Arabia is peculiar for these reasons: No. 1, it has more reserves today than any other country in the world, and more than many countries put together, and has great potential in the future for more reserves.

It is a country that is very friendly to the United States, so you have security that way. So, I would say that Saudi Arabia is a country about which the United States ought to think long and hard if they want to think about security of supply, not being fair with that country. And I think a lot of the economic agreements we entered into had that purpose.

So, I find that Saudi Arabia, particularly, is one of the most important countries in the whole producing world, and we should be careful in our relations with Saudi Arabia.

Mr. BANTA. Does this feeling that you just expressed explain the reason why Mobil is entering into refinery and pipeline joint ventures with Petromin?

Mr. TAVOULAREAS. We think, over a long period of time, security of supply is the most important thing we can give to the customers.

I always want to give them low prices, too. I want to do both. But security of supply could just wreck a country, if it does not have security.

Now, we enter these agreements because we think that this will give us the utmost security of supply, and at the same time, perform

a service that Saudi Arabia wants. Moreover, as you know, Saudi Arabia has tremendous capital, and the vast majority of capital in these projects would be supplied by Saudi Arabia.

Mr. BANTA. In exchange for these investments, you receive the guarantees of access to Saudi crude under favorable terms?

Mr. TAVOULAREAS. I am getting guarantees of access to crude, and I hope those guarantees hold up over a long period of time.

I think we have to understand this around the world today—not only the oil industry, any other part of international commerce—the day you no longer perform a service that the host country wants, your days are numbered. And I think that not only goes in oil; we have seen it in all the diplomatic channels, too.

Mr. BANTA. According to Petroleum Intelligence Weekly a few months ago, Saudi Arabia announced that, while there might be some government-to-government deals in the future, all sales to private companies would be made through the original four Aramco partners. Is this correct? And does it mean that any private refiner who wants Saudi oil will have to go through you, Exxon, Texaco, SoCal?

Mr. TAVOULAREAS. I do not recognize that all sales of oil will be made to the four Aramco partners. I do not recognize that part of the statement.

I think what Saudi Arabia decided to do was different than, for example, Kuwait did. Kuwait decided that they wanted to sell approximately half the oil to their old owners, and they wanted to build up their own marketing facilities on the outside.

Iran decided they wanted to market mostly through the partners, and Saudi Arabia has said the same thing. They want to market the majority of their oil through existing channels.

Now, remember they have made a deal with Shell Oil Co., and they said, with Shell, they will market oil. You have read in the papers the last couple of days, they were negotiating with France, and the negotiations fell down because they could not agree on price.

So, I do not think there is a decision on the Saudi Arabian Government's part they will not market outside of Aramco.

Mr. BANTA. One last question on pipelines. You indicated pipelines have very low rates of return. Now, in 1973, according to ICC statistics, Colonial Pipeline— I believe you have an interest—earned 65 percent on equity. Mobil Pipeline Co. showed a 19 percent return on equity. Are these low rates of return?

Mr. TAVOULAREAS. I am glad you asked that question. I will read the answer.

Since the owners of Colonial or their parent companies have effectively guaranteed Colonial's indebtedness, I believe the method of computing the returns should at least include the indebtedness, as well as the equity. As a matter of fact, Colonial's indebtedness in 1973 was about $398 million, and the owners had, and continue to have, that debt responsibility.

Dividends paid to the owners that year were $28 million, which was a fairly typical year. Therefore, Colonial's rate of return on debt plus equity was 6.4 percent in 1973, which is a proper way to discuss return on equity.

I might add that the owners of the present debt obligation, including Mobil, is not projected to be repaid until the 21st century.

Dividends, if any, in 1 year, which are paid by pipelines to shipper-owners, are limited by the Elkins Act Consent Decree of 1941. The dividends paid are limited to 7 percent of the latest evaluation of the pipeline, as established by the Interstate Commerce Commission. The ICC establishes an updated evaluation each year, so the evaluation stays current.

So, I think that any talk about 65 percent was certainly distorted.

You know, it is like saying, "You own your house, and you put 10 percent in your house, you have got a mortgage to the other 90, so you do not really have 100 percent in your house." You surely have the 100 percent in your house, because you are responsible for it.

Mr. BANTA. Mobil's annual report shows a pipeline debt of $60 million which has been carried for the last 18 years. Why was that not paid off?

Mr. TAVOULAREAS. I will have to get the answer to that question. I just do not know.

Mr. BANTA. Thank you, sir.

Mr. TAVOULAREAS. Thank you, Mr. Banta.

Senator HRUSKA. Senator Mathias, have you any questions?

Senator MATHIAS. Mr. Chairman, I will reserve my questions.

Senator HRUSKA. Mr. Tavoulareas, you were asked previously, how do you know that the present system is more efficient in its present structure than if it were separated into several component parts. You gave an answer which sounded reasonable, sounded good. And you concluded that there were many benefits that resulted from your particular type of way of doing business.

Now, then, there are seven bills pending before us, every one of them directed to making a fundamental and a very radical change in that structure. Whenever a change is advocated, the normal assumption is that the one who advocates the change will do two things—at least two things: First, that their change will work; and second, that it will work better than what they seek to displace.

You have indicated here that you have read the record of this subcommittee's hearings. Have you marshalled any facts that have been elicited from any of the proponents of these bills that bear upon the two propositions which I suggested; namely, the idea that there must be a showing that the changes advocated will work, and that the benefits from that work, in the second place, from that working, will be greater than the benefits under the present system? Is there any testimony on either of those propositions?

Mr. TAVOULAREAS. I did not read all the testimony. My people have read it all. And from what they tell me, I can certainly conclude that I see neither one of those criteria being met by any one of the seven bills. I do not see how it will be better, and I am not sure how it is going to work. I know it will be worse. I have been in this industry for almost 30 years now, and I came up from the bottom, and I know something about how the industry operates, and I know something about world economics and supply. And I just do not think tying the hands of the American oil industry behind their back, in these very troubled times, where we are worried about supplies for the future, how this could be good for the United States. It is amazing to me; it is just the opposite.

Senator HRUSKA. We had a bill here not too long ago, before this committee, that was a divestiture bill. It sought to have a spin-off in those companies that engage in the business of electrical energy, as well as in the distribution and the sale of natural gas. One of the questions that did arise and that was considered there was the difficulty of making such a spin-off, because they have certain outstanding indebtedness for which there are pledged the workings and the net profits of a unified business; namely, electricity, and of gas energy.

And they—the companies that came before us—said, "Just tell us what we can do to solve that dilemma; how much will be allocated; who will be responsible; who will undertake, and so on?"

Now, that is a relatively simple operation, compared to the operation which you have, because you have—in the petroleum industry—so many layers of different activities, and so on. Have you indebtednesses of your corporation which are pledged with the assets of the unity of all of these holdings and operations, or are they broken up by sections?

Mr. TAVOULAREAS. The vast majority of our indebtedness, the great majority, is a debt of the whole corporation. This is one of the things I call a technical nightmare. I do not know how you meet the standards that we gave to the bondholders when we said, "We pledge the assets of this corporation." I do not know how you break it up.

If I tried to do it, honestly, I would not know which segment of the business, in the future, would be more profitable—no, like I say, "I will put the bonds against this one, rather than this one." I think it is a legal nightmare.

Senator HRUSKA. Is there any involvement of the doctrine of impairment of contracts involved in something that would be forced along that line, and the owners of those bonds would be told:

> It is true that you have all of the assets of the corporation now, but we are going to break this thing into seven parts, and your particular bonds—you will be paid by the profits from the pipeline; then the next group will be paid from the profits of the retail market, and so on.

Would that type of thing involve at all the doctrine of impairment of contract?

Mr. TAVOULAREAS. We have been given advice by our attorneys that that will probably be in the courts for 20 years, just that one issue you are now talking about, because there is no question we cannot control our bonds. If I were a bondholder, I would sue. Why should I not sue? I end up with something less than I have in the first place. So, our lawyers tell us that could be tied up in the courts for at least 20 years.

Senator MATHIAS. Do they say that with a smile? Lawyers, 20 years of work?

Mr. TAVOULAREAS. No. Well, do you know how long it took the antitrust case that we had in 1949, Senator? I think we settled it—when did we settle it, George?

Mr. BIRRELL. 1969.

Mr. TAVOULAREAS. 1969, and we were acquitted. So, that was 20 years.

I just read in the paper the other day, the IBM case was brought 7 years ago, and it has not even moved to the first step, so I do not think it is unusual to see cases tied up for 10 and 20 years.

Senator MATHIAS. One area in the employment picture in which the Federal Government has moved with great effect and success is the question of unemployment among lawyers.

Mr. TAVOULAREAS. I am afraid you are right.

Senator MATHIAS. Excuse me, Mr. Chairman; I did not mean to interrupt.

Mr. TAVOULAREAS. Lawyers and accountants—we have got them now.

Senator HRUSKA. In fact, many of the bills are sometimes referred to as relief bills for the sake and benefit of the legal profession.

Mr. TAVOULAREAS. I think in our company, just on FEA alone, we have over 100 people working on the FEA regulations alone, just one small segment of what we are dealing with in our industry.

I mean, the burden that a lot of these laws have put on U.S. corporations, I think is something for all of use to ponder. I cannot argue against the objectives of almost any one of them. But when you take the whole total, it really makes inefficiency.

Senator MATHIAS. It becomes a substantial burden.

Mr. TAVOULAREAS. It really does.

Senator MATHIAS. It is a burden on the economy, not just on individuals.

Mr. TAVOULAREAS. I agree. That's what I am talking about.

Senator HRUSKA. From the record, as I remember it—and I am not as familiar with it as staff is, and perhaps other Senators—but the question of how this indebtedness will be treated and how it can be met, if divestiture is ordered, that question has been raised. I think most answers of witnesses who have undertaken to address themselves to it, come up with the same answer you did; namely, that it is fraught with great difficulty, and perhaps is insoluble.

But nobody that I know of yet has come before this subcommittee and said: The solution to that problem is thus and so. We will take care of that.

Now, let me ask this question: Without a solution to that problem, can there be successfully engineered and achieved, a divestiture of the petroleum industry by law, such as that proposed here, unless there is a solution to that problem?

Mr. TAVOULAREAS. I do not think so, until the courts rule. Until the time when we need a strong industry, we are going to have chaos.

Senator HRUSKA. And, of course, if it is a suspended judgment of that kind, and a great element of time, what impact will that have on purchasers of any component element of a unified petroleum industry? Would they like to invest hundreds of millions, or even billions, in a situation that said, maybe after 7 or 10 years, "Yes, you are the owner" or "No, you are not the owner"? Is that not the question they face?

Mr. TAVOULAREAS. Let me go beyond that, Senator. It is not only that question, but, as I said before, unfortunately, what OPEC has done is forced us into countries of the world and places in the world where energy is going to cost us much more than it cost us before. I said, we are involved, as a 50-percent partner, in one platform that cost $350 million, and we are getting involved, now, in two more platforms, the first of which we think will run $500 million.

We are now expending capital at a rate of $1.5 billion a year, $2 billion a year in capital budget, and let us say, our earnings are in the neighborhood of—I do not know, I have not seen the final earnings yet, but let us say, $800 million a year. Now, how are we going to raise that money to do the job, the new money that we need to do the job, so we will be sitting by for 20 years while the courts decide and going downhill in a hurry? And this is just not good for the United States.

It is not only existing bondholders. It is how do we raise new money with this uncertainty, because we do not generate enough money through earnings to carry out capital programs? It is almost the New York City problem all over again.

Senator HRUSKA. Any further questions?

We thank all of you for being here. You have added to the record in a meaningful way, and it will be information we will study diligently.

Mr. TAVOULAREAS. Thank you very much, Mr. Chairman, and staff.

Senator HRUSKA. Our next witness is Mr. Eliason, the president of the Rocky Mountain Oil & Gas Association.

Before we get to the witness, the Chair announces that Senator Thurmond had certain questions he wanted to propound to our most recent witness.[1] They will be submitted by staff to the witnesses for responses.

We welcome you here, Mr. Eliason.

STATEMENT OF MAX D. ELIASON, PRESIDENT, ROCKY MOUNTAIN OIL & GAS ASSOCIATION; ACCOMPANIED BY JACK SWENSON, GENERAL MANAGER

Mr. ELIASON. Thank you, Mr. Chairman, I would like to read my statement. I would like to also mention that I have with me today Mr. Jack Swenson, who is the general manager of the Rocky Mountain Oil & Gas Association headquartered in Denver, Colo.

Senator HRUSKA. Very well.

Mr. ELIASON. Mr. Chairman and gentlemen, I appreciate this opportunity to testify today against S. 2387 because its passage would have a serious adverse impact upon every American.

And as you have mentioned, there are a number of other bills which are presently pending before this committee which go to the same subject.

My name, as you have mentioned, is Max D. Eliason. I am the senior vice president and general counsel of Skyline Oil Co., which is headquartered in Salt Lake City, Utah, and we have a branch office in Houston, Tex.

I have been associated with Skyline since 1959, during which time we have explored for oil and gas in the Rocky Mountain States and in southern Louisiana. In addition, my company owns over 16,000 acres of prime-quality oil shale deposits in Uintah County, Utah, and it has been active for many years in attempts to start an oil shale industry.

In October of last year I became president of the Rocky Mountain Oil & Gas Association, which is commonly called RMOGA ,which is comprised of over 600 members including both major and independent oil operators.

Exxon, for example, is counted as one member and has one vote in our association, just as Skyline Oil Co. is one member and has one vote. Our members each are involved in at least one phase of the oil and gas business, including exploration and production, transportation, refining, and marketing in one or more of the eight States of Colorado,

[1] See p. 2520.

Idaho, Nebraska, North Dakota, South Dakota, Montana, Utah, and Wyoming.

It is as a representative of RMOGA that I appear here today. The diversity of its membership gives our association a unique perspective on the strengths and weaknesses of the oil and gas industry, and enables us to understand the serious impact which the proposed divestiture legislation would have upon our industry.

We assure the Members of Congress that the forced breakup of the major oil companies would be a grave mistake. These great companies, with their financial strength, operational expertise, and research capabilities, form the backbone of the oil industry.

While the individuals and smaller entities in the oil and gas business are likewise vitally important, our industry would be considerably less effective without the stabilizing influence of the integrated major oil companies.

I must admit that after studying this proposed bill, I am puzzled to understand why it is entitled the Petroleum Industry Competition Act of 1975. A more apt title would be An Act To Dismantle the Major Oil Companies Because They Are Big.

The premise upon which this bill was drafted is that the oil industry is noncompetitive, and that by breaking up the largest integrated oil companies into production, refining, transportation, and marketing segments, competition will be restored.

This is a false premise, and no bill should be adopted based on such a faulty assumption. One of the findings included in the declaration of policy of S. 2387 is that: Existing antitrust laws have been inadequate to maintain and restore effective competition in the petroleum industry.

The fact is that following dozens of investigations, hearings and court cases held over the last several years, no evidence of collusion or other anticompetitive practices on the part of oil companies has ever been found which would justify breaking them up.

Most people working in the oil and gas industry are astonished to hear a claim that our industry is not competitive. Those who claim otherwise do not understand the complexities of this industry and have undoubtedly reached their erroneous conclusion by misinterpreting statistics, or believing false claims.

There is no other major industry in this country which is characterized by greater competition than exists in the petroleum industry.

There are approximately 10,000 producers of crude oil, 130 refining companies and over 15,000 wholesalers of petroleum products in the United States. No firm controls more than 11 percent of national volume at any of the levels of industry operation.

For example, the 30 largest producers of crude oil account for only 65 percent of total production. Few, if any, other industries can claim similar statistics.

For instance, the eight largest producers of cigarettes control 100 percent of the market. If you exclude the eight largest producers of motor vehicles, there is only 3 percent of the market left.

If the major integrated oil companies were eliminating or stifling competition in the exploration and production phase of the oil business, my company would not have authorized me to be here today speaking in opposition to this legislation.

For obviously we are in direct competition with the major oil companies. Nor would I be in a position to speak on behalf of the over 600 members of RMOGA, most of which are not major integrated companies.

Strong competition still exists also in the refining and marketing phases of the business. I deal regularly with a Chevron dealer in my neighborhood in Salt Lake City. Almost every time I buy gas from him, he complains that many of his competitors are giving their gas away.

In fact he—I might add parenthetically—often asks me to talk to the president of such and such a company to see how they are able to sell—their dealers are able to sell at a lesser price than he is able to sell at. That sounds like competition to me.

Consider the fact that the private nonintegrated marketing companies thrived in the United States in the period beginning in 1968 through the first half of 1974 to such an extent that they increased their share of the U.S. gasoline market from 22.1 to 29.5 percent during that period.

In addition the number of refining companies having at least 50,000 barrels per day capacity increased 65 percent between 1951 and 1973.

This bill would force the divestiture of major integrated oil companies, even though they are not in violation of the antitrust laws. Since this legislation would affect only the largest oil companies, the conclusion follows that they are to be penalized solely because of their size.

Many smaller companies also have integrated operations, but they would not be affected. It is foolish to conclude that there is something intrinsically bad about large companies, and adopt legislation on that premise.

The large size of the major oil companies has been a benefit to this Nation and to its consumers, for they have been the primary impetus in developing the necessary energy supplies to build the United States into the greatest industrialized nation on Earth.

The financial and technological strength of these large companies is needed if the oil industry is to meet successfully the monumental problem of developing our domestic resources. Never in our history has any industry been faced with a greater challenge than now confronts the energy industries of the United States.

The job cannot be accomplished by small companies alone. The story of David and Goliath has an excellent lession on the question of size, which should not be lost to Congress when considering S. 2387. This lesson is that an entity which is small in size often has considerably more flexibility and mobility in its operations and can change policy decisions much more rapidly than can a large entity.

A small entity often can operate more efficiently and can adapt to changing conditions more rapidly than can a larger entity having many levels of management.

This is the reason why the major oil companies, which could be compared to Goliath, are not able to control the oil and gas industry and eliminate the independents, which could be compared to David.

If the sponsors of S. 2387 are trying to destroy the Goliaths to protect the Davids, then they should reassess their motivations since there is little danger that the Goliaths will eliminate the Davids from the oil industry.

This does not mean to say that the small operators in the oil industry are not in jeopardy. The number of independent operators engaged in exploration and production in the United States was cut from approximately 20,000 to 10,000 in the 20-year period from 1954 to 1974.

The cause of this dramatic drop was not pressure from major integrated oil companies, but rather, the poor economic returns from domestic exploration created by price controls on natural gas and low prices at which foreign oil was made available to this country.

Independent operators are continuing to go out of the oil business because the economic returns from exploration still are inadequate. Just last month I received from RMOGA's general manager in Denver, a letter which he had received from a RMOGA member advising that their assets are merely a shadow of what they once were, and that they are being sold to a liquidation company. The letter stated that "the rewards from exploration, in these times, do not justify the risks involved. We are grateful for your efforts, over the years, in behalf of the oil business. We are proud that we were once a part of it." Our general manager wrote a note to me at the bottom of the letter which said, "Sign of the times."

Unless the political attitude of hostility toward the oil industry changes, many more parties will be forced out of the oil business and it will thereby become less competitive than it is today.

Some Members of Congress apparently do not recognize the perilous predicament of the United States with respect to energy supplies, for otherwise they would vote down anti-oil-industry legislation. We now are importing over 6 million barrels of oil per day at an annual cost of in excess of $25 billion. A study by the Library of Congress made public on December 23, 1975, reports that the United States will import in the next 5 years as much oil as it has consumed from all sources in the last 3½ years.

This study, which was prepared for the Congressional Joint Committee on Atomic Energy, also concludes that in 1977 the United States will be forced to import 50 percent more oil than it does today, with all of the increase in foreign oil to come from North Africa and the Middle East. Since we already are importing approximately 40 percent of our supplies, the magnitude of this problem from an economic and national security viewpoint should be obvious to every American.

The report stated that: If the Arab oil producers decided to impose a 6-month embargo on oil to the United States in 1977, the projected U.S. gross national product would suffer a loss of between $39 billion and $56 billion with the loss of as many as 1.5 million jobs.

If it is the intent of Congress to allow a handful of Arab Nations to gain power over the destinies of the United States, then that objective is being achieved in grand style.

In the face of this situation, it is incomprehensible that Congress continues to adopt measures which will only worsen this critical problem. Among the actions already taken are the following:

One: The price of natural gas has been regulated at the wellhead since 1954 at levels so low that consumption thereof and dependence thereon has increased dramatically while domestic exploration declined because of the uneconomic return permitted by the Federal Power

Commission. Our supplies of natural gas now are dangerously low as a result.

Two: Prices of oil have been regulated since 1971 and recently the price of new oil has been put under controls and subjected to a price rollback. This price rollback alone will take over $3 billion from oil industry budgets in the coming year. This has reduced incentives to develop new reserves and to develop synthetic fuels, and it has impaired the industry's ability to develop our natural resources.

Three: Last year the depletion allowance on oil and gas was eliminated for "large producers" and reduced for so-called "small producers," thereby reducing exploration incentives and taking approximately $2 billion from exploration budgets. There is no logic to this legislative action since oil and natural gas are in extremely short supply domestically. Yet, a depletion allowance remains intact for over 80 other minerals, most of which are in abundant supply domestically.

Four: Environmental laws have been adopted which provide ready-made tools for no-growth advocates to delay and stop projects for the development and use of oil and gas, coal, oil shale, and atomic power.

Even if the United States were energy self-sufficient, the adoption of these anti-oil-industry measures would have been foolish. Congress has been irresponsible in approving such measures in view of the critically serious energy problems which threaten the physical safety and lifestyle of every American.

We petition you today to kill S. 2387 and similar measures. The bill has no redeeming merit and would only worsen our energy problems. The commitment of large sums of money to urgently needed energy projects will be delayed of necessity until this Damocles sword is removed.

The full extent of the adverse results which would come from its passage is hard to foresee. But among the effects which clearly would result from the dismantling of the major integrated oil companies are the following:

One: The cost efficiencies achieved through the size of these companies would be lost.

Two: The financing of large projects, such as the development of the frontier areas of the Alaskan North Slope and the Outer Continental Shelf and the construction of facilities to produce oil and gas from oil shale and coal, would be much more difficult and perhaps impossible. The magnitude of these projects and the risks involved have placed a severe strain on the financial abilities of even the largest oil companies. They are beyond the financial capabilities of smaller companies, even on joint-venture bases.

Three: The rate of construction of new refineries would be retarded, since it is highly risky to build these multimillion-dollar facilities without an assurance of adequate crude supplies. In these days of shortage, it is desirable for the owner of a refinery to own at least a portion of its supplies. This would not be possible if this divestiture legislation is passed.

Four: The amount of energy research conducted by private industry would be sharply decreased. Only the large major oil companies have the financial ability to finance these expensive endeavors; independent

producers, refiners, and marketers traditionally have not engaged in significant research activities. One key to the success of obtaining increased domestic reserves is the development of new technologies for secondary and tertiary recovery of oil and the production of so-called synthetic fuels.

How can Congress in good conscience even consider the passage of S. 2387 with the avowed purpose of increasing competition in the oil industry, when Congress itself, by the passage of legislation such as price controls on oil and natural gas, has been primarily responsible for forcing many parties out of the oil and gas business, thereby reducing competition. What could be more destructive of competition than price controls, and other governmental regulations such as the entitlements and oil allocation programs?

No other American nonutility industry is as heavily regulated as is the oil and gas industry. If this industry is not as competitive as Congress believes it should be, we suggest that the proper remedy is for Congress to repeal the anticompetitive legislation affecting oil companies. Passage of S. 2387 is clearly not the solution.

Dismantling the major oil companies would result in severe disruptions in the most effective and efficient oil industry in the world. It has taken over 100 years since Drake's first discovery of oil in Pennsylvania in 1859 for our free enterprise system to create the oil industry. It is foolhardy in the extreme for Congress now to impair the effectiveness of this industry by destroying its foundation, particularly at the time when we face the most serious energy problems in our history.

There are alleged champions and protectors of the American consumer who claim that the forced dismantling of the major oil companies will be in the best interests of the consumer. The members of our association, all of whom are likewise consumers, assert without reservation that these self-styled consumer advocates are wrong. Furthermore, they are doing great injury to every consumer by their foolish assertions and actions.

The best protection to the consumer will come from encouraging in every reasonable way the development of our domestic energy resources. This program must include the creation of a political and economic climate in which the oil industry can devote its full efforts to finding and producing new energy supplies. Given the opportunity to do so, the oil and gas industry will provide all of the petroleum products which will be needed to keep our industrial society operating.

Where would the United States be today if it had not been for the oil and gas industry? But of even more importance is the question, where will the United States be tomorrow if we allow the oil industry to be dismantled and crippled?

The answer to this latter question is that we will not solve our energy problems and we will increase our dependence on imported petroleum supplies coming from countries which are, in some cases, very hostile to the United States. The outflow of dollars to pay for this imported oil will increase dramatically, robbing our Nation of capital needed to provide jobs for our own people. Our political and military security will be greatly weakened and our economic destiny will be delivered into the hands of those who have the control of the energy production upon which we are becoming increasingly more dependent.

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The major oil companies of this country should not be forced into divestiture. Such an action would be akin to forcing the U.S. Navy to prepare for a naval battle by scrapping its carriers and battleships and relying on its destroyers and PT boats to win the fight.

The major oil companies are the "carriers" and the "battleships" of the oil industry. They should be left intact in order that we can win perhaps the greatest battle ever to be fought by the United States—the battle for energy self-reliance upon which we depend both for our political and economic independence.

Let us concentrate our efforts on winning this new "war of independence" as we begin 1976, our Bicentennial year!

Thank you, Mr. Chairman.

Senator HRUSKA. Mr. Eliason, thank you for your testimony. Dr. Measday, of the staff, will have a few questions for you.

You may proceed, Doctor.

Dr. MEASDAY. Thank you, Mr. Chairman. I just have one or two questions, mostly about Skyline Oil.

Mr. ELIASON. Yes, sir.

Dr. MEASDAY. What was your production last year?

Mr. ELIASON. The production of Skyline Oil Co. last year averaged in the neighborhood of about 208 barrels of oil per day, and the natural gas total for the year was about 580 million cubic feet.

Dr. MEASDAY. For the year?

Mr. ELIASON. For the year.

Dr. MEASDAY. Now, are your wells on your own leases or are they foreign leases?

Mr. ELIASON. Skyline Oil Co. operates in two ways in its exploration program. We own, in the Rocky Mountain areas, oil and gas leases on approximately 450,000 acres. We also have acreage down in south Louisiana, which are all under production.

The wells that were drilled were drilled either with our money or else by making farmouts to other companies.

Dr. MEASDAY. You farmed out?

Mr. ELIASON. Yes; we do make farmouts of our acreage. We make farmouts to other independents. We support wells that are drilled by majors. We have had joint ventures with major oil companies and independents.

A lot of times, who your partners are depends upon who your neighbors are.

Dr. MEASDAY. And, on your shale leases, these you have leased out, haven't you, to Sohio and Cleveland-Cliffs?

Mr. ELIASON. That is correct. We acquired these fee lands, oil shale fee lands, in the fifties and early sixties. They have been leased out. Originally, they were leased out—one group of them was leased to Sohio and Cleveland-Cliffs Iron Co. Subsequently, those two companies formed a combine with Atlantic Richfield, and—let's see—Atlantic Richfield was in there, and then Shell Oil Co. was in the combine. There was a breakup of the Colony operation, and, at the present time, the leases on our properties are owned by Sohio Petroleum Co. and the Cleveland-Cliffs Iron Co.

Dr. MEASDAY. Right. But the minimum royalties from these leases are a pretty important part of your own revenue?

Mr. ELIASON. They have been. As a matter of fact, we are one of the few companies that have made money in oil shale thus far, and we have taken that money and invested it in oil and gas exploration, whereas many companies take it from oil and gas exploration and then pour it down the drain in oil shale.

Dr. MEASDAY. So I presume that your position would be that you have had a very profitable relationship, effectively, with the major companies who have particularly supported the future in shale, as concerned. They have the opportunity here to develop that you do not have, yourselves?

Mr. ELIASON. Well, we consider our oil shale holdings, at the present time, to be the most valuable asset we have because we retained, under those leases, the landowner's royalty, which will go from 5 percent initially up to 7½ percent of gross production, after 6½ years. That is correct.

Dr. MEASDAY. You have a great future ahead of you.

Mr. ELIASON. We have if the political climate is correct. And I think the whole country has a great future in the energy business if we create a political climate which will allow us to develop our domestic resources.

Unfortunately, the actions that are being taken in the political arena are putting a tremendous strain on the oil and gas industry and its ability to move forward in the development of these resources.

I might mention that our company, also, was one of the founders of the Oil Shale Corp. The president of our company, in fact, back in 1954, raised the initial capital for the formation of the Oil Shale Corp., and we presently still own 4½ percent of the outstanding stock of that corporation.

Dr. MEASDAY. Thank you very much, Mr. Eliason.

Senator HRUSKA. Thank you for appearing. We are grateful to you for your contribution to the record.

The committee will recess until tomorrow at 9:30 a.m. in this same room, and we will hear from Prof. Edward Mitchell, of the University of Michigan, and Prof. Richard Mancke, Fletcher School of Law at Tufts University.

[Whereupon, the hearing was recessed at 3:41 p.m., to be reconvened at 9:30 a.m., January 22.]

VERTICAL INTEGRATION IN THE PETROLEUM INDUSTRY

THURSDAY, JANUARY 22, 1976

U.S. SENATE,
SUBCOMMITTEE ON ANTITRUST AND MONOPOLY
OF THE COMMITTEE OF THE JUDICIARY,
Washington, D.C.

The subcommittee met at 9:33 a.m., in room 2228, Dirksen Senate Office Building, Hon. Roman L. Hurska, presiding.

Staff present: Charles E. Bangert, general counsel; Henry A. Banta, assistant counsel; Walter S. Measday, chief economist; Patricia Y. Bario, professional staff member; William E. Kovacic, staff member; Catherine M. McCarthy, chief clerk; Peter N. Chumbris, minority chief counsel; Garrett Vaughn, minority economist.

Senator HRUSKA. The subcommittee will come to order.

We will continue our hearings and testimony on the several bills which are pending pertaining to the divestiture of various component elements of companies engaging in the petroleum industry.

This morning, we will have Prof. Edward J. Mitchell of the University of Michigan School of Business Administration and Prof. Richard B. Mancke, Fletcher School of Law, Tufts University, as our witnesses.

Professor Mitchell, will you come forward and proceed with your testimony. It is noted that you have an extended statement that you have filed with the committee, together with exhibits. That will be placed in the record in its entirety. You may proceed with your summary statement which you have also filed with us.

STATEMENT OF EDWARD J. MITCHELL, PROFESSOR OF BUSINESS ECONOMICS, GRADUATE SCHOOL OF BUSINESS ADMINISTRATION, THE UNIVERSITY OF MICHIGAN, DIRECTOR, NATIONAL ENERGY PROJECT, AMERICAN ENTERPRISE INSTITUTE

Professor MITCHELL. Thank you, Mr. Chairman.

I am Edward J. Mitchell, professor of business economics at the Graduate School of Business Administration of the University of Michigan. I am also director of the National Energy Project of the American Enterprise Institute.

I appear today to discuss the wisdom and consequences of forcing vertically integrated petroleum companies to divest themselves of billions of dollars of assets and of reorganizing the U.S. petroleum industry into separate producing, refining, transportation, and marketing companies, each operating at only one stage in the industrial chain.

The ostensible purpose of this coerced reorganization is to make the petroleum industry more competitive and, thereby, to lower the price consumers pay for oil products. For this divestiture to have the desired consequences, three conditions must be met:

First: The industry must be monopolistic or less than competitive as it stands, with artificially high prices for oil products.

Second: The monopolistic elements in the industry must be contingent upon vertical integration. Otherwise, vertical divestiture would not destroy the monopoly.

Third: The benefits of increased competition that might be induced by divestiture must more than offset the loss of any economies of vertical integration.

For vertical divestiture to be sound public policy, each of these three premises must be valid. If any one is invalid, the argument for divestiture fails.

If he is to be taken seriously, an advocate of divestiture must develop strong arguments based on economic logic and objective facts that each of these premises is valid. I believe it is impossible, based on the current state of knowledge, to establish any of the three premises with solid economic research.

A number of questions or issues bear directly on the divestiture issue and the validity of the three premises. I have dealt with many of them in my research and treated them at length in my full statement. My conclusions are as follows:

First: Vertical integration is not presumptively anticompetitive. I believe that most economists who have written on the subject believed that vertical integration has no bearing on competitiveness, except that it may reduce the harmful consequences of monopoly, where monopoly exists.

Some see the possibility of squeezes in situations where vertical integration exists, but these market squeezes would have to be demonstrated in the particular case at hand. There is no presumption that they occur in the petroleum industry or anywhere else in any other industry.

Second: As best we can measure it, the petroleum industry has a rather low degree of vertical integration. While there is no perfect measure of vertical integration, the most theoretically sound measure of backward integration indicates that the typical American industry is substantially more integrated than the petroleum industry.

According to this measure, which I discuss in my full testimony, the average U.S. manufacturing firm would have to divest itself of from 30 to 60 percent of its assets and employees just to get down to the low level of integration that already exists in the petroleum industry.

Third: The petroleum industry is competitive as it stands, and vertical divestiture would have no effect on competition. Entry by new firms is easy, and profits are comparable to or lower than those of other industries. For example, an investment of $1,000 in the Standard and Poor's 500 stocks, in 1953, would have been worth $10,922 at the end of 1974. That considers stock price appreciation and dividends to the investor. An investment of $1,000 in the 14 domestic refiners listed on the stock exchanges in 1953 would have been worth $9,007 at the end of 1974. Thus, the Standard and Poor's 500 stocks did about 20 percent better than the 14 domestic refiners.

Investments of $1,000 in the five international companies or in the two domestic producers that were listed in 1953 would have done far worse. The internationals would have been worth only $6,861 and the producers, $3,638.

Fourth: There is no systematic evidence of vertically integrated firms profiting from squeezes or of nonintegrated firms being injured by squeezes. Profits of refiners that are highly integrated into production, or into pipelines, are not higher than those of firms that are less integrated into production or pipelines.

Indeed, refiners that are highly integrated into pipelines showed distinctly lower profitability than those less integrated into pipelines.

Apparently, ICC regulation and the Elkins Act Consent Decree, which restricts pipeline dividends, operate to make pipelines less profitable than other phases of the oil business. This is unfortunate, since it probably means that many high-risk pipelines have not been built that would have lowered oil transport costs and consumer prices.

Nonintegrated refiners may survive in spite of generally higher costs because they possess a geographical advantage or perhaps some unique managerial abilities. But it is an important fact that small refiners have been substantially subsidized by the Federal Government since 1959. The old oil import program, the Interior Department sales of royalty oil on the OCS, the allocation and entitlements programs of the FEA, all tend to favor small, often nonintegrated refiners, and it is unclear how many of these small, nonintegrated refiners would survive in a truly free competitive market.

Fifth: There are important economies of vertical integration, due to transactional and communications efficiencies. These economies take the form of lower operating costs and lower capital costs. I have shown in my full statement that oil companies of any size and capital structure that are nonintegrated or less integrated into production and pipelines are regarded by investment advisory services as more risky, and it is an axiom of financial analysis that more risky firms have higher capital costs.

The immediate effect of a vertical divestiture would be a reduction in the wealth of the stockholders and bondholders of the affected companies. This would occur for two reasons: (*a*) Since the new entities are more risky than the old, potential buyers of their shares and bonds would offer less in the marketplace for any given stream of dividends and interest payments. Stock prices and bond prices would fall. (*b*) The future stream of earnings would decline, because of higher operating costs, and thus, income growth and prospective dividend and interest payments would be restricted, again lowering the share and bond prices.

After the permanent, once-and-for-all capital loss suffered by current stockholders and bondholders, the capital costs of the new entities would continue higher than capital costs of existing integrated companies. Over the longer term, this rise in the capital costs of the bulk of the petroleum industry could only mean a rise in consumer prices and reduced investment in domestic producing, refining, transportation, and marketing.

In the stockmarket and on corporate balance sheets, this would show up as higher rates of return to stockholders of petroleum com-

panies, but these stockholders would feel no wealthier. They would, on average, be indifferent, as between the lower rates of return on the less risky investments without divestiture and the higher rates of return on the more risky investments with divestiture.

Thus, while consumers would pay more for oil after divestiture, stockholders of oil companies would be no better off. What consumers would lose in higher prices, no one would gain. Vertical divestiture of the petroleum industry would be a deadweight loss to society.

Sixth: These cost savings of vertical integration have led numerous oil companies, small and large, foreign and domestic, Government-owned and privately owned, to integrate vertically. Vertical integration is not at all peculiar to large American companies.

Indeed, it is the active policy of the governments of West Germany and Japan to promote vertical integration among private and government-owned companies. I believe the U.S. Government should neither promote nor restrict vertical integration. The competitive marketplace should decide which method, integration or nonintegration, is the better one for supplying oil products at the lowest cost.

That concludes my summarized statement.

[The prepared statement of Professor Mitchell follows. Testimony resumes on p. 1881.]

Prepared Statement of Professor Edward J. Mitchell

Mr. Chairman and members of the Committee. I am Edward J. Mitchell, Professor of Business Economics at the Graduate School of Business Administration of the University of Michigan and Director of the National Energy Project of the American Enterprise Institute.

I appear today to discuss the wisdom and consequences of forcing vertically integrated petroleum companies to divest themselves of billions of dollars of assets and of reorganizing the U.S. petroleum industry into separate producing refining, transportation, and marketing companies, each operating at only one stage in the industrial chain.

The ostensible purpose of this coerced reorganization is to make the petroleum industry more competitive and, thereby, lower the price consumers pay for oil products. For this divestiture to have the desired consequences three conditions must be met:

(1) The industry must be monopolistic or less than competitive as it stands, with artificially high prices for oil products;

(2) The monopolistic elements in the industry must be contingent upon vertical integration (otherwise vertical divestiture would not destroy the monopoly); and

(3) The benefits of increased competition induced by divestiture must more than offset the loss of the economies of vertical integration.

For vertical divestiture to be sound public policy *each* of these three premises must be valid. If any one is invalid the argument for divestiture fails.

If he is to be taken seriously, an advocate of divestiture must develop strong arguments based on economic logic and objective facts that each of these premises is valid. I believe it is impossible based on the current state of knowledge to establish *any* of the three premises with respectable economic research.

A number of questions or issues bear directly on the divestiture issue and the validity of the three premises. I have dealt with many of them in my research and my conclusions are as follows:

(1) Vertical integration is not presumptively anti-competitive.

(2) Senator Bayh's statement,[1] that "no other industry is so completely vertically integrated" is incorrect; the petroleum industry has a relatively low degree of vertical integration.

(3) The petroleum industry is competitive.

(4) Vertical divestiture would not make the petroleum industry more competitive.

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[1] Senator Birch Bayh, "Opening Statement for Anti-trust Monopoly Subcommittee Hearings on Vertical Integration in the Oil Industry," September 23, 1975 (mimeo.), p. 3.

(5) There is no evidence of monopoly profits in the petroleum industry.

(6) There are substantial cost savings from vertical integration including lower operating costs and lower capital costs.

(7) Small non-integrated firms are not squeezed out of the industry and entry by new firms is not difficult.

(8) Vertical integration is not confined to large privately-owned American oil companies; it is common among both small and large, government-owned and privately-owned companies throughout the world.

IS VERTICAL INTEGRATION PRESUMPTIVELY ANTI-COMPETITIVE?

A look at the economic literature on vertical integration shows that there is no presumption that vertical integration weakens competition. The majority of writers believe that vertical integration has no weakening effect on competition and indeed that it reduces the harmful effects of monopoly where monopoly does exist. These writers include Bork, Liebler, Peltzman, Spengler, Schmalensee, and Warren-Boulton.[2] A smaller number, notably Edwards and Mueller,[3] believe there are some circumstances where vertical integration permits anti-competitive actions, such as market "squeezes". But even these writers do not find vertical integration presumptively anti-competitive. As Corwin Edwards puts it, vertical integration "tells nothing either about power or abuse of power. Hence it implies neither monopoly nor absence of monopoly. In so far as the monopoly problem is concerned, it is a neutral term." [4]

The prevailing view of economists is that monopoly is a horizontal phenomenon, and that monopoly prices are feasible when a firm or a cartel has a very large share of the market at one particular stage of the production process and has the means to keep other firms from entering and existing firms from expanding. Whether the petroleum industry is competitive or not therefore hinges on market power and freedom of entry at each stage, not in the extent to which firms operate at more than one stage.

Senator Bayh's opening statement at these hearings stresses the degree of concentration in the petroleum industry as a major issue.[5] I agree that it is a major issue. The statement then goes on to recite the market share of the largest twenty oil companies in production, refining, transportation, and marketing. The Senator then concedes that there are other U.S. industries—many others in fact—that are more concentrated. But, the Senator tells us, "concentration in the oil industry must not be weighed against concentration in other industries." [6] But what else could an objective person possibly weigh it against?

The impact of the relatively modest degree of concentration in the oil industry is said to be "highly negative." [7] No evidence is offered to support this statement. If it were true, however, it would mean that the impact of concentration in the bulk of the American economy is highly negative, or worse. The attack on the modest levels of concentration in the petroleum industry must therefore be regarded as an attack on American industry itself.

But what would happen to the degree of concentration if a vertical divestiture were accomplished? Nothing! If firms are dissassembled vertically there is no effect on the concentration at each stage. Exxon as it stands today is the largest crude producer in the United States. Exxon Production, the crude producer created by divestiture, would be the largest crude producer in the United States with the same market share as before. Indeed, the parade of statistics showing the shares of each market held by the twenty largest companies at *each* stage would not be changed one iota by vertical divestiture. Concentration at each stage would remain as it is now—modest—and competition would remain as it is now—aggressive. Thus, the argument that vertical divestiture would enhance competition is unfounded.

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[2] Bork, R. H., "Vertical Integration and Competitive Processes," in Weston and Peltzman, eds., *Public Policy Towards Mergers*, Pacific Palisades, Calif., 1969; Liebler, W. J., "Toward a Consumer's Anti-Trust Law: The Federal Trade Commission and Vertical Mergers in the Cement Industry," *UCLA Law Review*, Vol. 15, No. 4, June 1968; Peltzman, S., "Issues in Vertical Integration Policy," in Weston and Peltzman, op. cit.; Spengler, J. J., "Vertical Integration and Antitrust Policy" *Journal of Political Economy*, 58, (1950); Schmalensee, R., "A Note on the Theory of Vertical Integration," *Journal of Political Economy*, 81, March-April 1973; and Warren-Boulton, F.R., "Vertical Control and Variable Proportions," *Journal of Political Economy*, 1974, vol. 82, no 4.

[3] Edwards, C. D., "Vertical Integration and the Monopoly Problem." *Journal of Marketing*, vol. 17, (1952); and Mueller, W. F., "Public Policy Toward Vertical Mergers," in Weston and Peltzman, op. cit.

[4] Edwards, op. cit., p. 404.

[5] Bayh, op. cit., p. 2.

[6] *Ibid.*, p. 3.

[7] *Ibid.*, p. 3.

IS NO OTHER INDUSTRY SO COMPLETELY VERTICALLY INTEGRATED?

To answer this question requires a definition of vertical integration that permits comparisons between different industries. Three measures have been proposed. In Appendix A I explain why two of these measures must be rejected and why one measure, although imperfect, does have some validity. This is the ratio of the "net income"(y) of a firm to its sales (s), where "net income" is defined to be the sum of wages and salaries, profits before taxes, and interest on debt. This measure, originally proposed by Professor M. A. Adelman,[8] is in fact a measure of *backward* integration only, but it is the best we have. It is not clear that a measure of *forward* integration can be defined that would be useful for comparing different industries.

Application of this y/s measure to American industry has been undertaken by Adelman (op. cit.) and by Gort.[9] Adelman's conclusions are displayed in Table I below taken directly from his 1955 article. (p. 302). They show that the petroleum industry is the second least integrated industry of the nineteen manufacturing industry groups. Separate calculations from corporate reports for the same year on 183 large corporations confirm this finding. Of the nineteen manufacturing industries petroleum emerges as the third least integrated.

Calculations similar to Adelman's were made by Gort, except that Gort used the ratio of value added to shipments for the year 1954. It is unclear to me from reading Gort how faithful Gort's measure is to Adelman's definition. Table II reproduces table 30 from his book.[10] It shows petroleum to be the least vertically integrated of the thirteen industries, and by a rather wide margin.

These results may come as some surprise to oil men who often seem to regard their industry as highly vertically integrated. But a simple list of important contributions to the value of petroleum products that are usually or frequently not made by so-called integrated firms will serve to clarify the issue. Oil companies rarely build their own refineries, tankers, pipelines, or gasoline stations. Yet in a capital intensive industry depreciation of these items forms a significant part of the sales dollar. Also some equipment is leased rather than purchased, eliminating the rate of return as well as the depreciation component. For example, production departments frequently lease drilling rigs. Bonus payments and royalties form an important part of the sales dollar but accrue to the original owners of the petroleum resources, as a return to the efforts of "nature", not to the oil companies.

TABLE I.—RATIO OF ALL CORPORATE INCOME TO ALL CORPORATE SALES BY MANUFACTURING INDUSTRY GROUPS, 1949

[Dollars in millions; ratios in percent]

Industry group	Wages and salaries	Profits before taxes	Interest paid	Total income	Sales	Ratio of income to sales
Food and kindred products	$4,103	$1,600	$71.2	$5,775	$36,167	16.0
Tobacco manufactures	218	250	20.6	488	1,714	28.5
Textile mill products	3,134	596	31.6	3,761	10,602	35.5
Apparel and related products	2,086	142	7.4	2,235	7,896	28.3
Lumber and lumber products (except furniture)	970	228	7.6	1,204	3,061	39.4
Furniture and fixtures	1,218	97	6.6	1,320	3,082	42.8
Paper and allied products	1,496	547	22.6	2,066	5,301	39.0
Printing and publishing	2,444	249	13.3	2,707	6,067	44.6
Chemicals and allied products	2,504	1,475	38.7	4,017	13,355	30.0
Petroleum and coal products	2,041	2,416	126.8	4,614	18,450	25.0
Rubber products	785	181	10.1	977	3,088	31.6
Leather and leather products	900	83	5.6	988	2,750	35.9
Stone, clay, and glass products	1,421	522	8.7	1,952	3,917	49.8
Iron and steel and their products	6,123	2,042	83.1	8,253	19,921	41.4
Nonferrous metals and their products	1,604	477	28.2	2,109	5,587	37.8
Machinery (except electrical)	4,635	1,305	21.9	5,962	13,130	45.4
Electrical machinery	2,496	629	16.6	5,140	8,466	37.1
Transportation equipment	4,426	2,199	16.0	6,642	18,963	35.0
Miscellaneous manufactures	1,366	290	18.3	1,673	3,229	51.8

Source: "Census of Mineral Industries: 1939," Bureau of the Census; "Statistics of Income for 1946," Bureau of Internal Revenue; "Quarterly Industrial Financial Report Series" for 1946 and 1949. Federal Trade Commission and Securities and Exchange Commission: "Census of Manufactures: 1947," Bureau of the Census; "National Income Supplement, 1951, Survey of Current Business," Department of Commerce.

[8] Adelman, M., "Concept and Statistical Measurement of Vertical Integration," in *Business Concentration and Public Policy*, National Bureau of Economic Research, Princeton (1955).

[9] Gort, M., *Diversification and Integration in American Industry*, National Bureau of Economic Research, Princeton (1962). Gort prefers another measure to Y/S but his preferred measure is irreparably flawed. See Appendix B.

[10] *Ibid.*, p. 83.

TABLE II.—RATIOS OF VALUE ADDED TO SHIPMENTS, 589 MANUFACTURING COMPANIES GROUPED ON THE BASIS OF INDUSTRY AND EMPLOYMENT SIZE, 1954

Primary industry of company	Ratios for size classes [1]										Industry mean	Coefficient of variation (percent)
	(4)	(4)	(12)	(10)	(10)	(10)	(10)	(10)	(10)	(10)		
Food products	0.209	0.356	0.309	0.349	0.404	0.422	0.377	0.419	(8) 0.342		0.364	43.1
Textile mill products	.339	.395	.386	.406	.455	.346	.402	(6) .447			.399	25.8
Paper products	.452	.367	.379	.435	(9) .405						.406	23.4
Chemicals	.553	.513	.496	.438	.529	.512	.404				.492	30.1
Petroleum and coal	.179	.145	.239	(7) .147							.193	56.5
Rubber products	.434	.468	(4) .440								.447	17.7
Stone, clay, and glass products	.617	.583	.577								.586	16.2
Primary metals	.370	.359	.338	.512	.481	.492					.436	28.2
Fabricated metal products	.446	.497	.554	(7) .503							.516	20.7
Machinery [2]	.479	.551	.554	.562	.572	.561	.654	.611	.580	(8) 0.763	.594	21.5
Electrical machinery	.535	.·26	.44	.565	.571	.516					.522	23.4
Transportation equipment	.339	.529	.508	.475	.492	.476	(4) .492				.481	24.3
Instruments	.583	.582	(10) .659								.625	16.6

Source: Special census tabulation.

[1] Included are all multiestablishment companies in the specified industries with total employment of 2,500 and over, except for 6 companies for which data could not be shown for reasons of disclosure of individual company information. Numbers in parentheses indicate the number of companies represented in the class. The 1st class consists of the largest 4, the 2d, the next 4, etc. Numbers in parentheses in the body of the table show the number of companies in a cell where the numbers differ from those in the column head.

[2] Except electrical.

Both the Adelman and the Gort data show that larger firms do not tend to be more vertically integrated than smaller firms.[11] This is true for the petroleum industry and most other industries studied by them. This confirms research on the physical measures of vertical integration in the petroleum industry by Livingston and by McLean and Haigh.[12] Livingston found that the twenty largest domestic refiners in 1960 had an average ratio of crude production to refinery runs of 49.7 percent, while of the next twenty-five largest refiners, eighteen published appropriate data and their average ratio was 44 percent. McLean and Haigh show that in 1950 the largest eighteen refiners had a production-refining ratio of 50.0%, the ten next largest refiners had a ratio of 59.8%, and the fifteen next largest had a ratio of 21.2 percent. Still smaller refiners averaged somewhat higher than 21 percent.

Thus, in the petroleum industry integration from refining into crude remains at a fairly constant level until we move past the largest thirty firms or thereabouts. The top 28 firms (those with capacities of 30,000 b/d or greater) accounted for 87 percent of refining capacity in 1950. Very small (5,000 b/d or less) refiners had smaller production-refining ratios than the larger firms, but higher ratios of service station sales of gasoline to gasoline yields. While backward integration was less for very small refiners, forward integration was actually greater.[13]

The fallacy of associating vertical integration with monopoly power can be illustrated from the Adelman and Gort statistics. A well-known textbook on the economics of industry properly asserts that "Among our major manufacturing industries, textile production comes as close as any to meeting the formal requirements of pure competition." [14] Adelman's figures show textiles 40 percent more integrated than petroleum and Gort's show it 100 percent more integrated than petroleum. Furthermore, Gort's data show that the smaller textile firms are typically more vertically integrated than the larger ones.

To push the point to its extreme, if one wishes to see the epitome of an integrated firm one merely has to drive to the nearest small farmer's roadside fruit and vegetable stand!

If we take the Adelman and Gort figures at face value and if we were to accept the view that vertical integration is bad, then the Congress has its divestiture priorities all wrong. Before it starts forcing divestiture on the petroleum industry it ought, at the least, get the rest of the U.S. manufacturing industry down to the same level of integration as petroleum. To do this would require the average U.S. manufacturing firm outside of petroleum to divest itself of assets and employees accounting for 33 percent (using Adelman's figures) or 60 percent (using Gort's) of its operations.

ARE THERE COST SAVINGS FROM VERTICAL INTEGRATION?

Vertical integration means nothing more than substituting internal organization for the market. A firm always has two decisions to make for each product: (1) to buy it or to make it; (2) to sell it or to process it further.

When a firm chooses to make or to process further it vertically integrates. It does so because it is less costly to internalize than to use the market.

I defer to few in my appreciation of the social utility of markets. Nevertheless there are conditions where markets are inferior to internal organization.

The first condition is where transactions costs are high, a point originally developed by Coase.[15] The second condition is where information is available more quickly and/or more cheaply to the integrating firm than to outsiders, a point raised by Adelman [16] and developed by Arrow.[17] Most business men defend vertical integration on grounds of supply or market reliability, or costs of capital and reduction of risk. As we shall see, these points are valid but are more properly subsumed under the two conditions just given.

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[11] Adelman, op. cit., p. 82ff., Gort, op. cit., p. 84.

[12] Statement of Morris Livingston before the U.S. District Court for the Northern District of California, Southern Division, in the case of U.S.A. vs. Standard Oil Co. (Indiana), Civil No. 40212; and McLean and Haigh, *The Growth of Integrated Oil Companies*, Harvard University Press. 1954.

[13] McLean and Haigh, op. cit., p. 43.

[14] Weiss, L. *Economics and American Industry*, J. Wiley and Sons, New York 1961, p. 121.

[15] Coase, R., "The Nature of the Firm," *Economica* (nov. 1937), 4; and Caose, R., "The Problem of Social Cost," *Journal of Law Economics*.

[16] Adelman, op. cit., pp. 318–320.

[17] Arrow, K., "Vertical Integration and Communications," *Bell Journal of Law and Economics*, Vol. 6, No. 1, Spring 1975.

Market exchange is costly. It is especially costly when the contractual arrangements entered into by the parties can not adequately guarantee what each party wants, as is common in the petroleum industry. Indeed, it may be impossible to write for firms to arrive at a useful contractual arrangement.

By the costliness or impossibility of "contractual arrangements" I mean to include the probem of formulating any rule of behavior that prescribes detailed courses of action to be adopted in the face of complex future contingencies. Thus the "contractual arrangement" includes far more than the kinds of contracts known in everyday life. It includes any rule laid down in advance that would formally describe all the necessary adjustments in operations that would be made by each party in the future. Such a "contract" in many instances would be inordinately expensive, enormously time consuming, or even impossible to achieve. In general, the greater the complexity and uncertainty, the more costly it will be to devise a contractual arrangement that would adequately specifiy all future contingencies affecting the parties and adequately specify what each party must do.

Often, it is to avoid these problems that firms integrate. Unfortunately, some of the older economic literature (and some not so old) associated vertical integration with purely technical or engineering considerations and therefore assumed very narrow limits on vertical economies. For example J. Bain's well-known textbook *Industrial Organization* [18] (of which I possess a 1968 edition) states that: "The cases of clear economies of integration generally involve a physical or technical integration of the processes in a single plant. A classic case is that of integrating iron-making and steel-making to effect a saving in fuel costs by eliminating a reheating of the iron before it is fed to a steel furnace. Where integration does not have this physcial or technical aspect—as it does not, for example, in integrating the production of assorted components with the assembly of those components—the case for cost savings from integration is generally much less clear.[19]

Bain admittedly based these conclusions on "miscellaneous scraps of evidence" while noting the "lack of systematic research endeavor." [20] Unfortunately this narrow and highly conjectural view has influenced a number of policy makers.

The more modern view, stemming in large part from Coase [21] is summed up by Williamson:

"In more numerous respects than are commonly appreciated the substitution of internal organization for market exchange is attractive less on account of technological economies associated with production but because of what may be referred to broadly as transactional failures in the operations of markets for intermediate goods." [22]

It appears that some Senators and staff still retain the older, narrow view associating vertical integration solely with technical considerations, as evidenced by their concept of an efficient sized firm. In defense of their proposed cut-off points for the size of integrated operations permitted under the divestiture bill Senators Nelson, G. Hart, P. Hart, and Abourezk offer the argument that the most efficient size of a refinery is 150 to 200 thousand barrels per day.[23] But the optimal sized *plant* is largely a technical concept. The optimal sized firm, vertically and horizontally, is an economic concept. (It is peculiar that no senator ever offers a bill banning refineries less than 150 thousand barrels per day if that is really the minimum efficient size.) To determine the optimal-sized firm requires economic and financial information far beyond that required to determine the optimal-sized plant. Furthermore, what is optimal in one place is sub-optimal in another. Many refineries would become suboptimal in size if moved 100 miles from their present site.

Under what circumstances are contractual or market costs likely to become so costly as to lead to economically motivated internalization or integration? At least two are important:

First, when the investments associated with performance of the contract are long-term. When investments are short-term, contractual problems or mistakes can be continuously corrected and sequentially improving contracts can be arranged with the same or other parties. When the investments are long term one may never get a chance to correct a contractual imperfection.

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[18] New York, (1968).
[19] *Ibid.*, p. 381.
[20] *Ibid.*, p. 381.
[21] Coase, op. cit.
[22] Williamson, O., "The Vertical Integration of Production: Market Failure Considerations," *American Economic Review*, Vol., LXI, No. 2, May 1971, p. 112.
[23] Attachment of letter to Senate colleagues from Senators J. Abourezk, G. Hart, P. Hart, and G. Nelson (mimeo.), p. 6.

Second, when the investments associated with the agreement are highly specific and have an extremely low value in alternative uses.

Both circumstances arise, for example, if a refinery is built to handle a specific type of crude. The refinery is a long-lived investment. It may be that costs can be lowered by designing it specifically for a certain type of crude, but this makes it more vulnerable to any contractual performance problems that should arise since the alternative sources of the particular crude must be narrower than the crude market as a whole.

Failure to allow a firm to integrate vertically by owning its crude supply or the gathering system and pipeline for this crude force the firm to build a less specific and higher cost refinery (in other words a less vulnerable one) since there may be no contract that can satisfactorily replace ownership and direct control.

Some transactional costs of using the market can be seen when there is a contract dispute. Each side of the dispute has an incentive to haggle up to the point where the marginal cost of haggling (including litigation) equals the expected marginal benefit. But haggling is a zero-sum game; what one party gains the other loses. The haggling costs are therefore a net loss to the two parties collectively and to society as a whole. If the parties to the dispute were departments within the same organization a general manager would perceive the waste involved in the intraorganizational haggling and settle the dispute quickly by arbitrary fiat. This may be less equitable to one of the departments but it will usually be less costly to the firm.

A specific example of contracting problems in the petroleum industry is given by Standard of Ohio's attempts to arrange satisfactory long-term supplies of crude oil without actually integrating into crude production.[24] After the dissolution of the Standard Oil trust in 1911 Standard Oil Company (Ohio) was left as a small refiner and marketer operating within the state of Ohio and without crude production. "During the 1920s Sohio lost a large share of the Ohio market" and "by 1928 the company's competitive and economic position had become so precarious that a new management and an entirely new board of directors was placed in charge of the company's affairs." [25] In 1930 the new management attempted to solve its crude supply problems. It entered into a long-term contract for crude supplies with Carter Oil sufficient to meet all its refining needs. It further entered into an agreement with Standard Oil Company (New Jersey) and the Pure Oil Company to build a crude trunk line from the source of the Carter crude in Oklahoma to Illinois, where the crude could then be moved to Sohio refineries via existing common carrier pipelines. The agreement called for paying posted (market) prices for the crude plus fixed charges for purchasing and gathering services.

Two problems arose subsequent to the agreement. First, Sohio management concluded shortly after the initiation of the arrangement that the fixed charges for purchasing and gathering services were too high. It spent the early and middle 1920's attempting to reduce the rates with only partial success. Second, prolific crude fields were developed in the late 1930's in Illinois and the price of that crude delivered to Ohio refineries was lower than the cost of the Oklahoma crude. This made the crude Sohio contracted for non-competitive on Ohio, although presumably competitive in the southwest. "The situation became so difficult that Sohio was compelled to inform the Carter Oil Company that it could no longer comply with the provisions of the crude oil purchase contract. Fortunately, Carter did not seek the legal recourse available to it under the contract and permitted Sohio to withdraw from the arrangement.

In retrospect it appears therefore that Sohio's effort to assure its crude supplies by means of the long-term contract in 1930 eventually created more difficulties for the company than it solved." [26]

The contractural difficulties arose for Sohio because it did not anticipate in the contract the *possibility* of two events. First, crude prices plummeted in the 30's and the gathering and purchasing charges were in *fixed* not *percentage* terms. To quote the Sohio management: "at the present price of crude, it represents approximately 23 percent of the value of the crude itself—a rather ridiculous amount or percentage for a brokerage fee to bear to the cost of the product . . ." [27] Second, the temporary cheap supplies of nearby crude made the Oklahoma crude noncompetitive in Ohio. (If Sohio had owned the crude outright it could have simply

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[24] McLean and Haigh, *The Growth of Integrated Oil Companies*, Harvard University Press, 1954, pp. 239ff.
[25] *Ibid.*, p. 240.
[26] *Ibid.*, p. 246.
[27] *Ibid.*, p. 244.

held production back for future use, or sold the crude locally without the high gathering and purchasing charges. Under the contract neither option was available.)

The contract provided for neither contingency and was thus, in retrospect, incomplete. (Subsequently, Sohio embarked on a program of integration backward into crude. Under the terms of its recent agreement with BP it will become a crude-rich integrated company with enormous Alaskan production.)

A second condition favoring vertical integration is that knowledge can often be communicated faster and more cheaply within an organization than between two firms through the marketplace. This point originates with Adelman [28] who believes that vertical integration often occurs in rapidly growing or changing industries where the perception of what upstream or downstream facilities are required occurs much earlier to the integrating firm than to potential entrants into the new markets.

"If we start with an industry in its earliest years, when it is an innovation, it is at first adapted to and fills a niche in the existing structure of markets and of factor supply. It is essentially a rearrangement of known and available resources Few can discern its large possibilities for growth and for pushing the capacity of supplying industries and firms. The railroads were originally feeders to canals and turnpikes, and, later, pipelines and trucks were considered as feeders to railroads; the automobile was a rich man's toy; wireless transmission of signals was intended for ship-to-shore telegraphy; and many other examples might be given.

"As the firms and their industry grow, they do so under the forced draft of demand chronically in excess of suppy at prevailing prices. This economic tension is transmitted to the factor markets as the firms bid not only for increasing amounts but for changing composition of factors. As larger quantities are needed, some factors become relatively scarce and substitution must be resorted to, often by painful trial and error. Economies of scale now appear, as Stigler rightly insists; my point is that they appear unforeseen and generally lagging behind a keenly felt need. A sluggish response will often force the growing firm to provide its own supplies and/or marketing outlets." [29]

This motive for vertical integration has been extended from the case of a rapidly changing industry to the more general and omnipresent case of firms facing uncertain shifts in supply and demand conditions by Nobel Laureate Kenneth Arrow.[30] So long as these shifts can be communicated within an organization faster and more cheaply than through the market the economy of vertical integration exists.

Perhaps the best example of this motive for integration in the petroleum industry is the case cited by Adelman above: oil pipelines. The knowledge of where and when a crude pipeline ought to be built must occur to producer-refiner intent on transporting crude supplies before it occurs to anyone else. The producer-refiner can plan his pipeline and his refinery in parallel. Other potential suppliers of pipeline services obviously do not have access to the same detailed information day by day in the planning process that the refiner himself has. Even if a producer-refiner should choose to communicate his plans each day to a number of potential pipeline companies this would be a more costly and less timely approach than simply keeping its own transportation department in close touch with its producing and refining departments.

This communications or planning motive for integration is greatly reinforced by the transactions cost motive in the case of pipelines. An oil pipeline is among the longer-lived and most specific investments one can make. Once built it can move liquids between point A and point B. That is all it can do. If one builds a pipeline on the basis of a contractual arrangement and later finds the arrangement faulty the error would not be correctible and would prove extremely costly.

For this reason crude oil pipelines are almost never built by anyone but integrated companies. Non-integrated pipelines—crude or product—have been the exception. Even in the twenties and thirities when the rapidly expanding pipeline industry offered ostensibly high rates of return to attract new investments hardly any non-integrated companies chose to enter the industry and the building of new lines was left almost entirely to integrated companies.

Lest one believe that there was anything artificial or contrived about these arrangements we have only to look at the sorry experience of non-integrated oil pipelines created by the forced divestiture of Standard Oil in 1911. Arthur Johnson,

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[28] Adelman, op. cit., pp. 318–320.
[29] Adelman, op. cit., p. 319.
[30] Arrow, op. cit.

at the conclusion of his massive two-volume history of U.S. oil pipelines,[31] summarizes the divestiture consequences:

"Although the 1911 decision eventually added to the number of independent, integrated companies, it could not—and did not—end the interdependence of pipelines and refiners. None of the refining companies divorced from the combination remained without pipelines of their own two decades later, and most had found it necessary to integrate backward sooner than that. The pipeline companies separated from the combination found themselves just as dependent on Standard companies' patronage as before the dissolution. Because initially the dependence was reciprocal, they made few changes in operating practices and rates. This policy, plus the changing location of oil production and consumption centers, contributed to the decline or demise of most of the independent disaffiliated pipeline companies by the early 1930's.

"Limited disintegration of the most powerful element in the oil industry by antitrust action, then, failed to produce a viable, independent pipeline sector." [32]

As mentioned earlier, businessmen do not usually couch their arguments for vertical integration in terms of contractual or communication problems. Typically, they will think in terms of the importance of reliable supplies, assured markets, the reduction of risk, and lower financing costs. Yet, while seemingly different, the businessman is saying the same thing as the economist. When the businessman says he must acquire an upstream supplier to assure reliable supplies he is saying (in our language) that it is impossible to write an ironclad and complete contract with an upstream supplier that gives him the assurances he needs to run his plant efficiently, or that no upstream company has acquired the knowledge as to exactly what he requires and is not likely to do so in the near future. In brief, because of the impracticability of perfect contracting or the lack of communication of his needs, it is cheaper and more timely for the businessman to do it himself.

The lower risks and reduced costs of capital often cited as an advantage of vertical integration also stem from transactional advantages of the integrated firm. The integrated firm can be viewed as a chain of business entities that are better able to enter into long-term complete contracts, while the non-integrated firm can be viewed as one of a chain of business entities that is constrained to deal more often in spot markets because of contractual problems. Possessing long-term assurances on the terms of the supply of its raw materials and the demand for its product each department of an integrated firm can plan for and realize a less variable level of output and less variable unit costs in the face of fluctuations in demand and supply at each stage of the market. Knowing with more certainty its future level of operations permits the integrated firm to:

(1) Incur lower average costs since knowledge of future rates of operation generally permits more specialized (less flexible) facilities; and

(2) Incur smaller variations in levels of output and hence smaller variations in average unit cost.

This second advantage results in less variable profits and hence a less risky investment for the stockholders and bondholders of the integrated firm.

As an example of the way in which lower and less variable costs can be achieved by integration consider the matter of inventories. Because fluctuations in demand are smaller and because information about market conditions in the downstream operations can be communicated to and from upstream operations more quickly than through the market the integrated firm need hold a lower quantity of stocks than its non-integrated counterparts. This lower level of inventories means:

(1) Lower carrying costs of inventories per unit of sales; and

(2) Smaller fluctuations in inventory values as crude and product prices vary and hence smaller variations in unit sales cost.[33]

The lower variability of operations of integrated refiners is strongly confirmed in by the survey of McLean and Haigh. In 1950 "the typical integrated refining company was able to maintain refinery runs equal to 81.6 percent of its operating and shutdown capacity whereas the typical non-integrated company was able to maintain refinery runs equal to only 54.3 percent of its operating and shutdown capacity." [34]

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[31] Johnson, A. M., *The Development of American Petroleum Pipelines: A Study in Private Enterprise and Public Policy, 1862–1906*, Cornell U. Press (1956); and Johnson, A. M., *Petroleum Pipelines and Public Policy, 1906–1959*, Harvard U. Press (1967).

[32] Johnson, *Petroleum Pipelines* . . . , p. 471.

[33] Although lower inventory/sales ratios are possible for integrated firms they may in fact choose larger inventories in order to further smooth the levels of operations. My point is that for a given degree of "smoothness" in operating rates inventories will tend to be lower for the integrated firm. On the choices available and the advantages of integrated firms, see McLean and Haigh, op. cit., pp. 312–318.

[34] *Ibid.*, p. 40.

Most significant, McLean and Haigh find that integration is a far more decisive factor in determining operating rates than size. ". . . although the larger refining companies typically had higher levels of refinery runs than did the smaller ones, the differences among companies of different sizes were significantly less than the differences between the companies in the integrated and non-integrated groups . . . Moreover . . . the differences *between* successive size groups were characteristically less than the differences between the integrated and non-integrated companies *within* each size group." [35]

Another attempt to reduce the variability of operating rates is sought in the marketing operation of some integrated firms. It is highly competitive and volatile gasoline market firms often sell gasoline to service stations which feature convenient location, credit, and other consumer services. This availability of gasoline with service is advertised and greater customer loyalty is sought. By appealing to "regular customers" cross-elasticities of demand among different gasolines are reduced. The reduced volatility of sales created by this approach enables the firm to operate at less variable rates and therefore to reduce operating costs and reduce the variability of operating costs, thereby making profits less erratic and lowering investor risk. With competition among many companies adopting this approach the benefits of lower operating and capital costs are passed on to the consumer in the form of lower prices.

Integrated refiners seem to have adopted this approach more commonly than non-integrated refiners, according to the 1950 survey of McLean and Haigh. The typical integrated company converted 43.4 percent of its refinery runs to gasoline and naphthas whereas the typical non-integrated company secured a gasoline and nahptha yield of only 27.0 percent. Again, "the variations in the typical ratios among different sizes of refinery companies were less than between integrated and non-integrated companies . . . many of the non-integrated refiners have elected to concentrate on specialty products, other than gasoline, where the lack of well-recognized brand names is not a handicap to them." [36]

My theory of the risk-reducing aspect of vertical integration has the following empirical implications.

(1) Output rates of integrated firms fluctuate less than those of non-integrated firms,

(2) Unit final sales prices of integrated firms fluctuate less than those of non-integrated firms;

(3) Integrated firms attempt to differentiate their products and advertise more than non-integrated firms.

(4) Profits of integrated firms fluctuate less than those of non-integrated firms;

(5) Investors regard integrated firms as less risky than non-integrated firms and offer capital at a lower cost to integrated firms than to non-integrated firms.

From the foregoing arguments and evidence one might form the impression that vertical integration is always economically superior to non-integration. That is not the case. The arguments made above are general and, in general, integration in the petroleum industry is presumed to be superior. Nevertheless, there are many special circumstances in which the benefits of integration can be realized without actual integration. Also, like all good things integration has its costs, and the benefits of integration are subject to diminishing returns. Beyond some point further integration may yield no reductions in unit costs or further stability in profits. Indeed, as will be shown below, integration from refining backward into crude will, beyond a certain point, make a firm less stable.

Perhaps the most important situation in which refinery integration into crude or transportation yields no benefits that are not already realizable without integration is the case of what might be called "geographical advantage". Often a small oil field is discovered lying under an existing market. If the size of the market is smaller than the producing rate of the field a refinery equal to the size of the market will be built to use the local crude, the excess crude being transported to the next closest refinery. The local refinery is assumed to be below the optimal scale of refineries. Thus, only one refinery will be built locally to handle the local crude.

This local refinery has no motivation to integrate. Its supply of crude is assured. Its market is assured. The next closest refinery, which is purchasing at least some of the same crude, cannot bid away the local refinery's crude supply or its customers unless it is so much more efficient that it can pay the transport cost *to* and

[35] *Ibid.*, p. 40., italics in original.
[36] *Ibid*, p. 41.

from its refinery and still offer more for the local crude or undercut the local refiner's product price.

While a larger refinery will be more efficient than a smaller one (up to about 150,000 bpd, as noted before) the existence of many small crude fields and markets distant from large refineries coupled with the high cost of moving small volumes of oil suggest that it will be common for the local refiner to have an enormous transportation or geographic advantage over the nearest competing refineries. In all such circumstances the local refiner has no need to integrate into production or marketing to achieve the transactional efficiencies of an integrated firm.

A second and very similar case is where the local crude supply is smaller than the local market. In this case the local refinery will be built to handle all of the local crude. The remaining part of the market will be supplied from outside. The costs of product from outside will set the local product price. The local refiner will have no control over that. However, the local refiner will be in a position to influence the local crude price. Since he can acquire the local crude to some extent on his own terms he can always compete in the local product market and sell all of his output, backing out some non-local product if necessary. Again, the local refiner has an assured supply and an assured market and can plan accordingly. He can thus achieve many of the efficiencies of integration without actually integrating.

An example of the first type of local refiner with geographic advantage was the Shallow Water Refining Company.[37] The company owned a very small (3000 bpd) refinery located in western Kansas. The nearest competing refinery was in Wichita, 200 miles away. The transportation advantage over this refinery was 1.5 to 2 cents per gallon, which amounted to a 58¢ to 77¢ per barrel advantage on refinery runs. The total cost of refining per barrel, even for so small and inefficient a plant, averaged 54.7¢ per barrel. With crude oil at the local fields selling at the same price for all refiners, there was no way for outside refiners to undersell Shallow Water.

Shallow Water did not own or lease any marketing facilities. The output of the refinery was transported overwhelmingly by outside truck haulers. The company owned no pipelines. Significantly, the stockholders of Shallow Water did own the pipeline company that supplied about one-third of its crude, but this was not integrated into the operations of the refining company. Quite possibly the motive here was to get the pipeline built quickly (see Adelman above, p. 18), and obviously not to coordinate refining and pipeline operations. Some of the remaining crude was brought in by railroad and some by company trucks. Only after ten years of operation (1937–1946) did the company enter into any crude oil producing activities. Entry on a relatively small scale apparently assured the firm that production for some pools would be maintained as the natural rate of decline proceeded. In general, "it's strategic location assured the company that whatever crude oil was available in the area would be diverted to the refinery." [38]

Ashland Oil and Refining Company, operating in the Kentucky-West Virginia region during the 1920's and 1930's provides a similar example.[39]

There are no data available that show with any precision the extent of non-integration due to "geographical advantage". However, some data put together by Cookenboo [40] bear upon the question Cookenboo classified refineries as "market-oriented", "crude-oriented", or at "nodal" tran-shipment points. He then classified refiners as "independent" or "major" and observed the relationship between these classifications. Unfortunately the major-independent classification is of little use for our purposes (if indeed it is useful for any purposes other than political rhetoric). Nevertheless, it is probably true that the bulk of the non-integrated refinery capacity is in the "independent" category. Cookenboo finds that 60 percent of "small independents" capacity is purely "crude-oriented", while only 12 percent of "major" capacity is.[41] This is consistent with the existence of many small

[37] McLean and Haigh, op. cit., pp. 633–639.
[38] *Ibid.*, p. 638.
[39] *Ibid.*, pp. 639–641.
[40] L. Cookenboo, *Crude Oil Pipelines and Competition in the Oil Industry*, Harvard University Press, (1955);
[41] Cookenboo, op. cit., p. 52.

non-integrated "geographically advantaged" companies among the "small independents". (It does not *prove* that much of the non-integrated capacity is "crude-oriented" or "geographically advantaged" because, while "non-integrated" tends to imply "small independent," "small independent" does not necessarily imply "non-integrated.")

Since it has been my primary purpose to explain the benefits and motivations of vertical integration I have neglected two important questions:

(1) Why petroleum companies don't integrate into some activities; and

(2) Why petroleum companies normally do not integrate fully into their integrated activities.

The answer to the first question consists of several parts. First, it is obvious that some parts of the industry do not involve long-lived or specific investments. Offshore drilling rigs, for example, are highly mobile. They can be used for relatively brief periods in one location and then be moved on to another location. Offshore drilling rigs are therefore commonly rented rather than bought. Second, the activity into which the petroleum company considers integrating may only be efficiently performed by a firm that performs many other tasks unrelated to the petroleum industry.[42] For example, firms that build and design refineries also build and design other industrial facilities. There are no pure refinery-building firms—just engineering and construction firms that build a wide range of facilities. (A firm that built only refineries might find itself totally unemployed at times. The construction business is sufficiently erratic as it stands without further destabilizing demand by narrow specialization.) Thus, if the integrated firm were to efficiently enter the refinery construction business it would have to acquire or create a construction company. This would take the oil company far afield from its areas of expertise and know-how. The diseconomies of managing greatly differing businesses would set in. Third, the potentially integrated business may be one that the firm has only irregular use for. For example, seismographic work may be required only on particular occasions. It will commonly be cheaper therefore to hire a firm that serves many clients and finds itself highly employed than to set up a seismographic division that cannot be used productively on a regular basis.[43]

Even when a petroleum company integrates into a particular activity it normally does not integrate fully; that is, the average operating rates or capacities of the production, refining, marketing, and transportation sectors, are not perfectly equated. As elaborated above, the transactional advantages of integration are equivalent to the advantages of perfect long-term contracts as opposed to using the spot market. The advantages of long-term contracts are, in turn, the cost savings yielded by the ability to plan with greater certainty regarding the future and to specialize facilities with regard to inputs, outputs and the level of operations, plus the lower capital costs associated with more stable operating rates, sales revenue and profits.

But trading in spot markets has its advantages, too. It permits greater flexibility and enables the firm to take advantage of changing profit opportunities at different times and places by shifting purchases and sales among markets. Thus, the firm must always balance the benefits of long-term as opposed to spot trading. We must suppose that in general the benefits of each approach diminish as we employ that approach more and more. At some point a balance is struck that optimizes profits and risk. A priori we cannot say where that balance will occur for each firm.

Consider the case of refining-production integration. Often, it happens that a refiner integrates into production rather than the other way around. That is, the refiner is highly motivated to acquire an assured crude supply, while the crude producer is relatively less concerned about acquiring assured markets. The reason for this is partly a function of the nature of each business and partly a function of

[42] M. Canes, "The Vertical Integration of Oil Firms," American Petroleum Institute (May 1975), mimeo, p. 25.

[43] The firm could offer the services of its seismographic crews for sale to other firms when not in use, but the value of their crews to competing firms may be perceived as considerable lower than the value of the services of an independent firm.

the institutions created in the production area. The failure to use crude oil production capacity now means that crude must be sold later, that cash inflow is postponed, and therefore that the present discounted value of the crude is reduced. The failure to use refinery capacity leads not only to this postponement of cash flow, but also to a deterioration in the refinery unrelated to its use. Refineries depreciate with age as well as use, while crude oil capacity depreciates (depletes) almost only with use. Thus, by the nature of the activity the refiner is more highly motivated to operate his plant near capacity levels of utilization.

The institutions of market demand prorationing and rateable take laws in effect assure an individual producer that he will produce a "fair" share of the total crude produced in a state. Market demand prorationing allocates production among producers so as to prevent some producers from displacing the production of others. Rateable-take laws ensure that gathering lines acquire crude from producers in proportion to their production and thus assure that once produced the crude oil will be sold. While these institutions do not work perfectly they do reduce enormously the fluctuations in demand for the crude oil of individual producers. There is no comparable institution for refiners.

Thus, it is refiners who will be more interested in acquiring long-term assurances of crude supplies while the motivation of producers to integrate forward into refining is less. How far will a refiner choose to integrate into production? This would seem to depend upon a number of factors, including:

(1) The location of the refineries relative to crude sources and transport facilities;

(2) The specificity of crude used;

(3) The propensity of management to assume risks;

(4) The capabilities of management in spot-trading.

Even when all these factors are known the magnitude of integration could not be predicted well if integration is attempted through exploration as opposed to acquisition of proved reserves. The same dollar investment in integration via exploration may yield very different quantities of crude capacity and have different degrees of realized integration.

The uncertainty of exploration is itself a deterrent to integration. The acquisition of assured crude supplies through exploration is a riskier activity than refining. Thus, acquisition of crude via exploration decreases the risks to the refining department of an integrated firm but this is offset to a degree by the fact that the overall firm is undertaking more riskier investments in the producing department. At low levels of integration into crude the reduction of risk and costs in refining will probably more than offset the added riskiness of investments in production. As the level of integration grows the incremental cost and risk advantages to the refining department will decline while the incremental risks incurred in production will remain high. (Incremental risks in production could decline somewhat with the magnitude of exploration if diversification is practiced.)

Focussing on risk alone a refiner at 100 percent self-sufficiency in crude only increases the riskiness of the firm when it expands crude production beyond that point. Indeed, the trade-offs may be such that the riskiness of the firm is at a minimum long before 100 percent self-sufficiency is reached.

If one looks at the statistics on integration of refiners into production one finds that the different choices made by firms in varying circumstances plus the varying degrees of success realized in exploration programs result in widely varying self-sufficiency ratios (crude production divided by refinery runs). For the 22 domestic refiners listed in Table III the average ratio is 55.2 percent. But individual firms vary from 0 to 149 percent. Eight of the 23 firms have ratios of 20 percent or less. All but two of the remaining firms have ratios between 47 and 96 percent. (Skelly has a ratio of 110 percent; Getty, 149 percent). Thus, the pattern seems to be that firms barely integrate at all (those 20 percent or less), or integrate from about 50 to 100 percent.

TABLE III.—STOCK RATING, SIZE, CAPITALIZATION, CRUDE OIL INTEGRATION, AND PIPELINE INTEGRATION DATA FOR 22 DOMESTIC REFINERS

Company	Standard & Poor's stock rating [1]	Total assets [2] (millions)	Common stockholder's equity/capitalization [3] (percent)	Refining self-sufficiency [4] (percent)	Pipeline integration index [5]
American Petrofina	3	$263	68	20	0
APCO	4	151	54	15	0
Amerada Hess	4	1,378	50	20	1
Ashland	4	1,275	46	13	14
ARCO	2	4,629	75	58	17
Cities Service	2	2,495	71	88	44
Clark	4	206	59	2	15
Commonwealth	5	382	46	0	0
Continental	2	3,250	64	59	44
Crown	5	115	55	2	2
Getty	3	2,182	82	149	1
Husky	4	281	54	96	1
Kerr-McGee	3	807	70	92	1
Marathon	2	1,514	70	78	29
Murphy	4	568	41	68	2
Phillips	2	3,270	66	49	20
Shell	1	5,172	69	64	17
Skelly	2	748	88	110	3
Standard (Indiana)	1	6,182	76	47	26
Sun	2	2,980	70	48	15
Tesoro	4	157	72	17	0
Union	3	2,696	65	77	13
Average	3.0	1,850	64	53	12

[1] 1975 Standard & Poor's stock rating converted to numerical index by the following rule: A+=1, A=2, A−=3 B+=4, B=5. Source: Standard & Poor's "Stock Guide" (December 1975).
[2] Net assets, Dec. 31, 1972, as given by "Moody's Industrials," 1973, various pages.
[3] Common stock plus retained earnings plus capital surplus divided by net assets minus current liabilities times 100, Dec. 31, 1972. Source: "Moody's Industrials," (1973).
[4] 1972 domestic crude production divided by 1972 refinery runs times 100. Source: Kerr-Rice Chemical Service, (1973): "Moody's Industrials," (1973).
[5] Barrel-miles of trunkline crude and product traffic in owned pipelines (jointly-owned pipeline traffic prorated on basis of ownership share) divided by 10,000 times average daily refinery runs. Source: Barrel-miles data from special study by "Oil & Gas Journal" staff; refinery run data: same as above.

Table III also indicates the varying degrees of integration into pipelines. As with integration into crude, some companies are far more integrated into pipelines than others. But, by and large, they are not the same companies. The four companies with the highest ratios of crude production to refinery runs—Getty, Skelly, Husky, and Kerr-McGee—are integrated into pipelines only to a trivial extent. It is true that those companies that are heavily integrated into pipelines—Cities Service, Continental, Marathon, and Standard (Indiana)—are also substantially integrated into crude. But the reverse is not true. The simple linear correlation between the indexes of integration into crude and into refining is only .14, indicating an almost total lack of correspondence overall.

Earlier I stated that the benefits of integration were of two sorts: (1) lower average costs of operations and (2) lower capital costs. I have made no attempt in my research thus far to quantify the effects of integration on operating costs but I have made a good start on the effects of integration on capital costs. An equation has been estimated that relates investment risk to its principal determinants, including firm size, capital structure and integration. From this equation it is possible to measure the extent to which integration reduces investment risk and therefore capital costs.

The starting point for this analysis is a good measure of investment risk. Possible measures included the so-called "beta coefficient" derived from financial theory and the various quality ratings assigned to stocks and bonds by advisory institutions such as Moody's and Standard and Poor. My research thus far points to the use of the stock ratings as the most relevant and useful measure for our purposes. Standard and Poor rates common stocks primarily, but not exclusively, on the basis of investment risk from A+, the highest rating, to C, the lowest rating for a firm not in reorganization. (The definition and criteria for Standard and Poor stock ratings are given in Appendix B.)

It is an axiom of economic and financial analysis that higher investment risks imply higher rates of return to stockholders and bondholders. Precisely how much higher equity capital costs become when spot ratings decline could not be found in the financial literature. I have therefore undertaken some research on this question but no quantitative conclusions are available yet.

Table III supplies the raw data for our analysis. It is generally believed that size contributes to financial stability and lower risk. We have therefore included the 1972 net assets of each petroleum refiner as a potential explanatory variable. Capital structure is also believed to be important and we have thus considered stockholder's equity as a percentage of capitalization. Pipeline integration was measured by the index given and defined in Table III. Integration into crude is a more complex matter. We have already indicated that beyond some point further integration probably makes a firm more risky as the inherent riskiness of the crude producing sector overwhelms the risk reducing effects of integration. In other words integration into crude has a V-shaped effect on risk: at first reducing risk and then raising it. To capture this effect I constructed the following two variables:

SSF equals the crude integration index if that index is 50 percent or below and equals 50 percent if the index is 50 percent or greater;

SSR equals the crude integration index if that index is 50 percent or greater and equals 50 percent if the index is 50 percent or less.

Thus, SSF measures the effect of integration into crude up to 50 percent and ignores any further integration, while SSR measures the effect of integration beyond 50 percent and ignores integration up to 50 percent.

My choice of 50 percent as the point at which the *average* domestic refiner minimizes risk is merely a guess. I have not experimented with other figures to find the particular percentage that makes the equation work best. I would stress that the point of lowest risk will be different for each firm and that firms are not interested in simply minimizing risk, nor should society want all firms to minimize risk.

The following equation was estimated by applying ordinary least squares to the date in Table III:

$$\underset{}{SPR}=6.5-\underset{(-2.4)}{.00018\ TA}-\underset{(-4.8)}{.044C}-\underset{(-3.6)}{.026\ SSF}+\underset{(2.3)}{.011\ SSR}-\underset{(-2.0)}{.015\ PI}$$

$$R^2=.92, \quad F=39$$

where SPR is the S & P stock rating in the metric given in Table III; TA is total assets or net assets; C is stockholders equity as a percentage of capitalization; SSF and SSR are as defined above; and PI is the index of pipeline integration. The numbers shown in parentheses below each coefficient is the corresponding t-statistic.

The coefficients and the t-statistics tell us that each of the explanatory variables is a significant determinant of the S & P rating. The equation is to be interpreted as follows:

Other things constant, each additional billion dollars of assets raises a firm's stock rating by about two-tenths of a risk class;

Other things constant, an increase of ten percentage points in stockholder's equity increases a firm's stock rating by almost half of an S & P class;

Other things constant, increased integration *up to the 50 percent benchmark* into crude reduces risk: a ten percentage point increase in self-sufficiency raises the S & P rating about one-quarter of a class;

Other things equal, increased integration *beyond the 50 percent benchmark* raises risk: a ten percentage point increase in self-sufficiency lowers the S & P rating about a tenth of a class;

Other things equal, an increase of ten percentage points in the pipeline index raises the S & P rating by about one-sixth of a class.

Taken together the five explanatory variables accoun ıfor 92 percent of the variation in stock ratings. If the scores predicted by the equation are rounded to the nearest whole number (as the S & P index is given) then 19 of the 22 companies' ratings are predicted exactly correct by the equation and the other three are off by one class each.

To explain in less technical terms the effect of each variable the following comments are offered:

If two firms were otherwise identical but one firm had five billion dollars more assets, the larger firm would probably rate one class higher;

If two firms were otherwise identical but one firm had twenty percentage points less debt in its capitalization, the more conservative firm would rate one class higher;

If two firms were otherwise identical but one firm had 50 percent self-sufficiency while the other firm had no crude production the more self-sufficient refiner would rate more than one class higher;

If two firms were otherwise identical and one firm was 150 percent self-sufficient while the other was only 50 percent self-sufficient, the firm with relatively more crude production would rate one class lower;

If two firms were otherwise identical but one firm had no pipelines while the other had the highest pipeline integration of the 22 refiners, the more integrated refiner would have a rating about two-thirds of a class higher.

In general terms, the most important conclusion is that all these factors combined seem to determine the overwhelming bulk of the differences in ratings or risk among domestic refiners. More surprising is the conclusion that size is not nearly so crucial as degree of integration and capital structure. For example, if Standard of Indiana, the largest company in our sample, were to exchange its pipeline and production assets for more refining assets and shift its capital structure to that of Murphy Oil, it would remain just as large but would fall from A+ to B+ in the S & P ratings according to our equation.

All of the discussion thus far has dealt with equity capital. Obviously an equation like that we computed to explain stock ratings could also be computed for bond ratings. But the equation for bond ratings would be more complex and I have had not had time to construct it. While a stock rating depends on the general riskiness of the company a bond rating depends on that *plus* the specific terms of the bond issue in question: the rights of bondholders, the guarantees offered them, the specific assets backing the bonds, if any. I believe such an equation can be constructed and that it would also show that vertical integration reduces the risk to bondholders other things constant. With regard to the connection between bond rating and cost of debt, it is well known that higher rated bonds offer lower yields, as can be observed in any issue of the Federal Reserve Bulletin. For example, the October 1975 issue, p. A28, shows that September 1975 Baa rated corporate bonds cost their issuers 16 percent more than Aaa rated bonds.

A major problem in making predictions of the consequence of divestiture from my equations is the difficulty in calculating for each company the value of assets in each sector and therefore I cannot predict the size of the remaining refining entities. More serious, however, is the fact that the equation predicts stock ratings only for refiners, it does not predict ratings for producers or pipelines or marketers. I would conjecture that each of the latter would be far riskier and have higher capital costs than a refiner of comparable size and capital structure. Thus, any consequences predicted for the remaining refining entities would be more severe for the producing, pipeline, and marketing entities.

My judgement with respect to pepeline companies is supported by the experience of the split-up pipeline companies after the 1911 Standard Oil divestiture and by the current rates of return achieved by non-integrated pipeline companies. In May 1963 *Moody's Transportation Manual* lists only two non-integrated oil pipeline companies, Kaneb and Mid-America (later MAPCO). Another non-integrated company, Williams Bros. (later Williams Cos.) had substantial pipeline investments which it greatly increased in 1966 with the purchase of the Great Lakes Pipeline system. Over the period 1964–1974 Williams Cos. earned its stockholders the highest average annual rate of return of all the Fortune 500: 37.4 percent, while MAPCO earned 21.5, and Kaneb 12.4 percent. The average for all Fortune 500 companies was 1.8 percent. Since there has been no apparent flood of capital into the pipeline industry by non-integrated companies (including the three cited here) one must conclude that the cost of capital to non-integrated pipelines is substantial.

That producing entities are riskier than refining entities is supported by our equation which shows that firms that integrate beyond 50 percent tend to have lower stock ratings. Table V supports this point more directly. It compares those six smallest refining companies from Table III with self-sufficiency less than 20 percent with the six largest producing companies. As much as possible therefore we are comparing pure refining companies with pure producing companies. The average size of refiners and the producers is about the same. (At any rate the size difference observed would have no perceptible effect on stock rating according to our equation.) The average S & P stock rating is identical for the two groups. But the producers have far stronger capital structures. According to our equation, if the refiners had had the capital structures the producers had their ratings would have been six-tenths of a rating class higher. Since they in fact had the same rating one infers that a producer identical in size and capital structure to a refiner wouid probably have a stock rating about six-tenths of a class lower.

TABLE IV.—SIZE, CAPITAL STRUCTURE AND STOCK RATING OF PRODUCERS AND REFINERS

Company	Total assets (millions)	Stockholder's equity as a percentage of capitalization	Standard & Poor's stock rating
REFINERS			
American Petrofina	$263	68	3.00
APCO	151	54	4.00
Clark	206	59	4.00
Commonwealth	382	46	5.00
Crown	115	55	5.00
Tesoro	157	72	4.00
Average refiner	212	59	4.17
PRODUCERS			
Aztec	80	81	5.00
Consolidated	69	58	6.00
General American	222	100	4.00
Louisiana Land	406	66	2.00
Superior	572	62	3.00
Reserve	87	72	5.00
Average producer	239	73	4.17

Source: Table III or same sources as table III.

Thus, the impact of divestiture on capital costs for the producing and pipeline entities after divestiture is likely to be greater than for the refining entities (and probably far greater in the case of pipelines).

We have not dealt at all in this analysis with the five U.S. international companies: Exxon, Gulf, Mobil, Socal, and Texaco. Undoubtedly, the analysis applies to them but it would be improper for purposes of estimating our equation to pool together primarily domestic firms with firms whose production and refining lie mostly outside North America. Nevertheless, the impact estimated for Shell and Standard of Indiana would probably apply equally to the international companies after divestiture.

The immediate effect of a vertical divestiture would be a reduction in the wealth of the stockholders and bondholders of the affected companies. This would occur for two reasons. First, since the new entities are more risky than the old, potential buyers of their shares and bonds would offer less in the marketplace for any given stream of dividends and interest payments. Stock prices and bond prices would fall. Second, the future stream of earnings would decline because of higher operating costs and thus income growth and prospective dividend and interest payments would be retarded, again lowering the share and bond prices.

After the permanent once-and-for-all capital loss suffered by current stockholders and bondholders, the capital costs of the new entities would continue higher. Over the longer term this rise in the capital costs of the bulk of the petroleum industry could only mean a rise in consumer prices, reduced consumption of petroleum, and reduced investment in producing, refining, transportation and marketing. In the stock market and on corporate balance sheets this would

show up as higher rates of return to stockholders of petroleum companies. But these stockholders would feel no wealthier. They would on average be indifferent as between the lower rates of return on the less risky investments without divestiture and the higher rates of return on the more risky investments with divestiture. Thus, while consumers would pay more for oil after divestiture, stockholders of oil companies would be no better off. What consumers would lose in higher prices, no one would gain. Vertical divestiture of the petroleum industry would be a deadweight loss to society.

IS VERTICAL INTEGRATION CONFINED TO LARGE PRIVATELY-OWNED AMERICAN COMPANIES?

The answer is no. Facts cited above indicate that small and medium-sized American companies are commonly integrated. The numerous easily-observed instances of vertical integration throughout the world by both private and government-owned petroleum companies suggests that it is a common way of doing business abroad as well as at home. If one insists that vertical integration exists for the prupose of monopolization as opposed to its inherent economies then one is implicitly arguing that not only American but numerous foreign private and government-owned companies are engaged in the same monopoly game.

The list of foreign privately-owned petroleum companies with a significant degree of vertical integration include:

Attock Oil Co. Ltd. (England)
Berry Wiggins & Co. Ltd. (England)
Canadian Hydrocarbon Ltd. (Canada)
"Delek" The Israel Fuel Corporation Ltd.
Husky Oil Ltd. (Canada)
Maruzen Oil Co. Ltd. (Japan)
National Refinery Ltd. (Pakistan)
Pacific Petroleums Ltd. (Canada)
Petrofina S. A. (Belgium)
Wintershall Aktiengesellschaft (Germany)
Royal Dutch/Shell Group

Vertically integrated petroleum companies that are entirely or largely owned by foreign governments include:

British Petroleum Co. Ltd. (BP)
Campagnie Francaise des Petroles (CFP) (France)
Entreprise de Recherches et d'Activities Petrolieres (ERAP) (France)
Ente Nazionale Idrocarburi (ENI) (Italy)
Iraq National Oil Co. (INOC) (Iraq)
National Iranian Oil Co. (NIOC) (Iran)
Neste Oy (Finland)
Norsk Hydro A.S. (Norway)
Oesterreichische Mineralolwervaltung A.G. (OMV) (Austria)
Petroleo Brasileiro S.A. (Petrobras) (Brazil)
Petroleos Mexicanos (PEMEX) (Mexico)
Societe Nationale pour la Recherche, la Production, le Transport, la Transformation, et la Commercialisation des Hydrocarbure (SONATRACH) (Algeria)
Venezolana Del Petroleo (CVP) (Venezuela)
Veba A. G. (Germany)

According to Professor Neil Jacoby at least 50 integrated oil companies entered the international market over the period 1953–1972.[44]

It is unclear why so many government-owned companies would be vertically integrated if the sole purpose of integration is to achieve a monopoly. If government wants a monopoly, it can merely create one at a single stage: production, refining, transportation or marketing. Monopoly at any one stage would give the government monopoly power with regard to the entire industry.

Not only do government-owned integrated oil companies exist in large numbers and size, but there is a strong movement in some countries for government to encourage the merger of non-integrated companies or to directly merge non-integrated government companies. Recently, the West German government through its 40% interest in Veba A. G. has merged Deminex (a government sponsored and subsidized group of overseas production companies), Aral A. G.

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[44] Neil H. Jacoby, *Multinational Oil*, Macmillan, New York (1974), p. 120.

(a large retail marketer), Gelsenberg A. G. (an integrated oil, petrochemical and nuclear power company), with the old Veba company (a producer-refiner).

The Japanese government is pushing ahead with plans for inducing the merger of non-integrated refining and marketing companies.[45] The plans would involve the merger of 29 companies into two or three concerns according to the Ministry of International Trade and Industry. Kyodo Seikyu Co., a large oil wholesaler, began merger talks last October with six refining companies that jointly account for 18 percent of Japan's refining capacity.

Apparently the West German and Japanese governments' assessment of vertical integration is very different from that of the sponsors of vertical divestiture in the U.S.

ARE SMALL NON-INTEGRATED FIRMS SQUEEZED OUT OF THE INDUSTRY BY INTEGRATED FIRMS? [46]

This is one of the very few questions for which a specific answer or theory had been proposed. De Chazeau and Kahn [47] advanced the theory that vertical integration does in fact permit a "squeeze" to be placed on non-integrated refiners. Their argument can be summarized as follows:

"A firm that had crude production equal to its refinery output would be indifferent to the price of crude oil for a given product price. Its total revenues would be the same regardless of the crude price and, given its costs, its profits would be the same. However, crude production was favored by the tax system. Higher crude prices would mean a greater value to the depletion allowance and, thus, lower taxes. Thus, for any product price and profit before taxes, a greater profit after taxes would be realized by taking minimum earnings on refinery operations and maximum earnings in crude production.

"Few refiners have complete self-sufficiency in crude production. But even if they had a fairly high degree of self-sufficiency, it can be shown arithmetically that they would benefit from a rise in crude prices even if product prices remain unchanged. When the depletion allowance was 27.5 percent, a refiner with 77 percent self-sufficiency or higher would benefit from higher crude prices even if product prices remained unchanged. If only a part of the crude price increase were passed on in the product price, a correspondingly lower degree of self-sufficiency would suffice to make the crude price increase profitable. (The FTC's report on the petroleum industry succeeded in proving the impossible: that the reduction in the depletion allowance increases the incentive to higher crude prices:)[48]

"Thus, an artificially high crude price and artificially low refining margin would exist. This would make it difficult for refiners that were not integrated to survive and discourage entry into refining since the refiner must also be a crude producer.

"This artificial price structure would obviously imply that crude production would be more profitable than refining, and therefore both crude producers and highly self-sufficient refiners would be more profitable than less integrated refiners. In fact, de Chazeau and Kahn show that from 1947 to 1957 security prices of producers and highly self-sufficient refiners substantially outperformed less integrated refiners. Also, from 1946 to 1955 accounting profits on total invested capital were higher for producers than for refiners." [49]

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[45] *The Wall Street Journal*, Nov. 17, 1975, p. 6.

[46] Some of the material used in this section has been reported to this committee by me on an earlier occasion. See my testimony before the Special Subcommittee on Integrated Oil Operations, Committee on Interior and Insular Affairs, U.S. Senate, 21 February, 1974.

[47] Melvin G. de Chazeau and Alfred Kahn, *Integration and Competition in the Petroleum Industry* (New Haven: Yale University Press, 1959), pp. 221–229.

[48] This is due to an arithmetic error. See Preliminary Federal Trade Commission Staff Report on its Investigation of the Petroleum Industry (Washington, 1973), Appendix B. I am grateful to my former colleague, Richard Mancke, for pointing this out and the fact that when the arithmetic is corrected, the argument collapses.

[49] de Chazeau and Kahn, op. cit., pp. 321–332.

The de Chazeau and Kahn argument is not sustainable in logic or in fact. It is true that artificially small refining margins would drive nonintegrated refiners out of the business. However, they would also drive integrated refiners out of the refining business. If the refining business is unprofitable, it is unprofitable to everyone. The argument requires integrated refiners to continue investing in activities that yield subnormal earnings and thus not to maximize the total profits of the firm. The rational integrated firm would cease investing in refineries and invest in super-profitable crude production. Indeed, anyone, whether refiner, producer, or outside the oil business, would want to invest in production and avoid refining until each sector's rate of return became normal and equal.

But, it will be counter-argued, this is a conspiracy, and even though it is not rational for the individual firm to build refineries, the group must build them and so they will be built. Adding the assumption of conspiracy does make the argument more logical, but it makes it even less realistic. If a cartel is requiring its members to invest in unprofitable activities, then it must divide this burden among the firms in some equitable manner. But, in fact, refining and production activities—that is, unprofitable and profitable activities—are shared very unequally among large firms. Getty's ratio of crude oil production to refinery runs in 1972 was 149 percent. Standard of Ohio's ratio was 7 percent. How does Getty induce Standard of Ohio to keep sinking money into refineries? For this cartel to work, literally billions of dollars of bribes would have to be paid among the top twenty or so companies. No evidence has been presented that this happens. To my knowledge, no one has suggested that it happens.

What about refining and producing profits? Everyone knows that producing is more profitable than refining. As with so many things everyone knows, this is untrue. During the period examined by de Chazeau and Kahn (1947–1957) crude prices rose 64 percent. During the same period spare capacity in refining rose from 4.9 percent to 10.1 percent. It would certainly be surprizing if stock prices of producers had not performed better than those of refiners.

Economic theory suggests that production and refining should be equally profitable in the long run, although they may certainly differ in the short run. Therefore, over the long run producers should earn rates of return similar to refiners, and refiners with relatively large crude production should earn rates of return similar to less integrated refiners, adjusted, of course, for any differential risk in these activities.

Looking at Table V we find only two producers for the period 1953 to 1972, and they earned 9 percent. Fourteen refiners averaged 11.3. It would be hard to say profitability was significantly different given only two observations on producers. In any case it certainly contradicts the de Chazeau-Kahn thesis which requires that the producers do better than the refiners. When we turn to the 1960–1972 data, we find eleven producers averaging 5.3 percent, much lower than the twenty-one refiner average of 12.5 percent.

TABLE V.—OIL INDUSTRY STOCKHOLDERS' AVERAGE ANNUAL RATE OF RETURN AND STA D & POOR'S 500 STOCK COMPOSITE INDEX, 1953-72 AND 1960-72

[In percent]

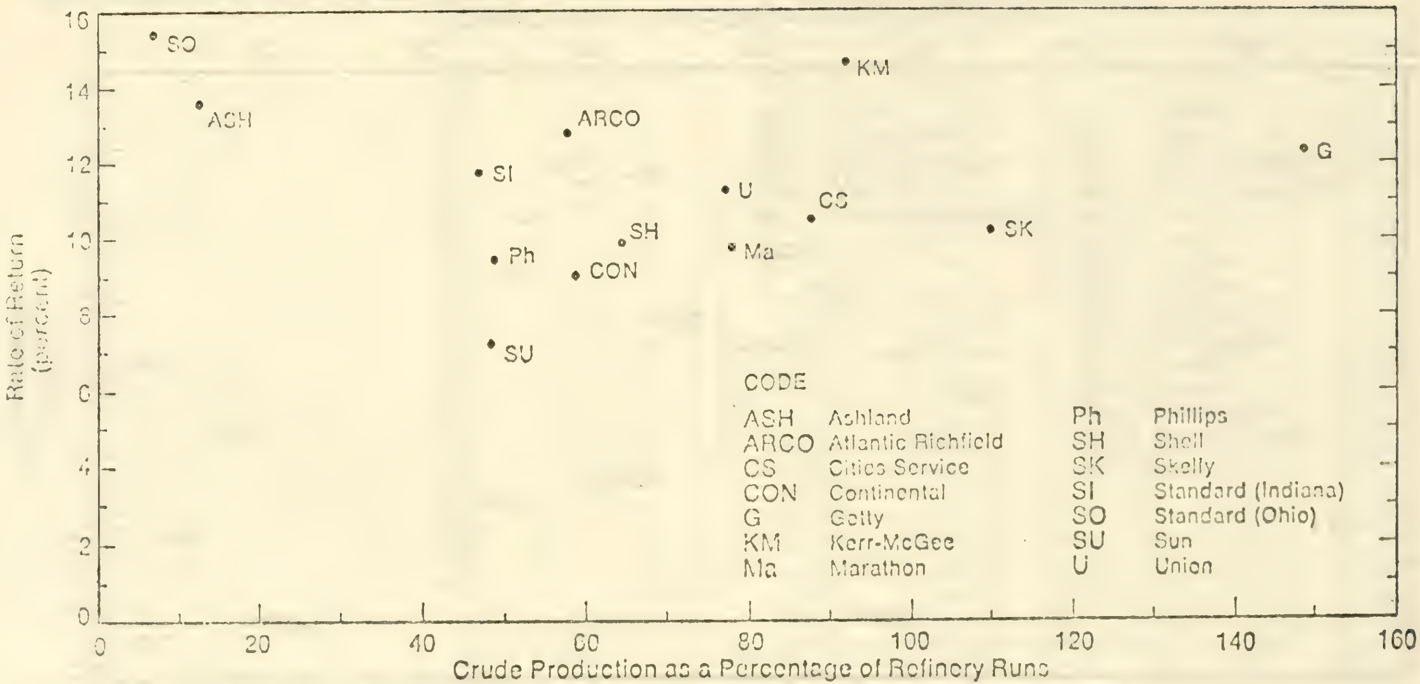
Refiners	1953-72	1960-72
Domestic:		
American Petrofina		18.5
Ashland	13.8	13.6
Atlantic Richfield	12.8	14.6
Cities Service	10.5	9.7
Clark		19.0
Commonwealth		11.8
Continental	9.0	6.9
Crown		9.0
Getty	12.3	16.0
Husky		11.4
Kerr McGee	14.6	18.3
Marathon	9.7	10.2
Murphy		10.5
Phillips	9.4	7.8
Shell	9.9	6.8
Skelly	10.2	12.5
Standard (Indiana)	11.7	15.3
Standard (Ohio)	15.4	16.1
Sun	7.1	9.4
Union	11.1	12.8
Average	11.3	12.5
International:		
Exxon	11.6	10.7
Gulf	12.3	8.9
Mobil	13.3	15.3
Standard (California)	11.4	10.2
Texaco	13.7	9.7
Average	12.5	11.0
Canadian:		
Gulf Oil of Canada		11.1
Imperial Oil	12.4	17.2
Pacific Petroleum		12.3
Average	12.4	13.5
Standard & Poor's 500 Stock Composite Index.	15.6	12.8

Producers	1953-72	1960-72
Domestic:		
Aztec		8.9
Baruch-Foster		.9
Consolidated		4.9
Crestmont		−4.8
Crystal		4.8
Felmont		8.7
General American	8.9	11.5
Louisiana Land		13.7
Reserve		−5.2
Superior	9.0	8.9
Westates		5.5
Average	9.0	5.3
Canadian:		
Canadian Export		6.4
Canadian Homestead		24.9
Canadian Superior		14.3
Dome	21.4	32.0
Home		15.8
United Canso		20.3
Average	21.4	19.0
Overseas:		
Asamera		37.5
Belco		4.7
Creole		5.2
Occidental		23.8
Average		17.8

Note. This table is the same as that used in my 1973 testimony before this committee, except that 1 error is corrected. In my earlier testimony Reserve Oil & Gas was mistakenly classified as a refiner instead of a producer. This correction results in a strengthening of the point made in my testimony—that producers were less profitable than refiners over the 1960-72 period.

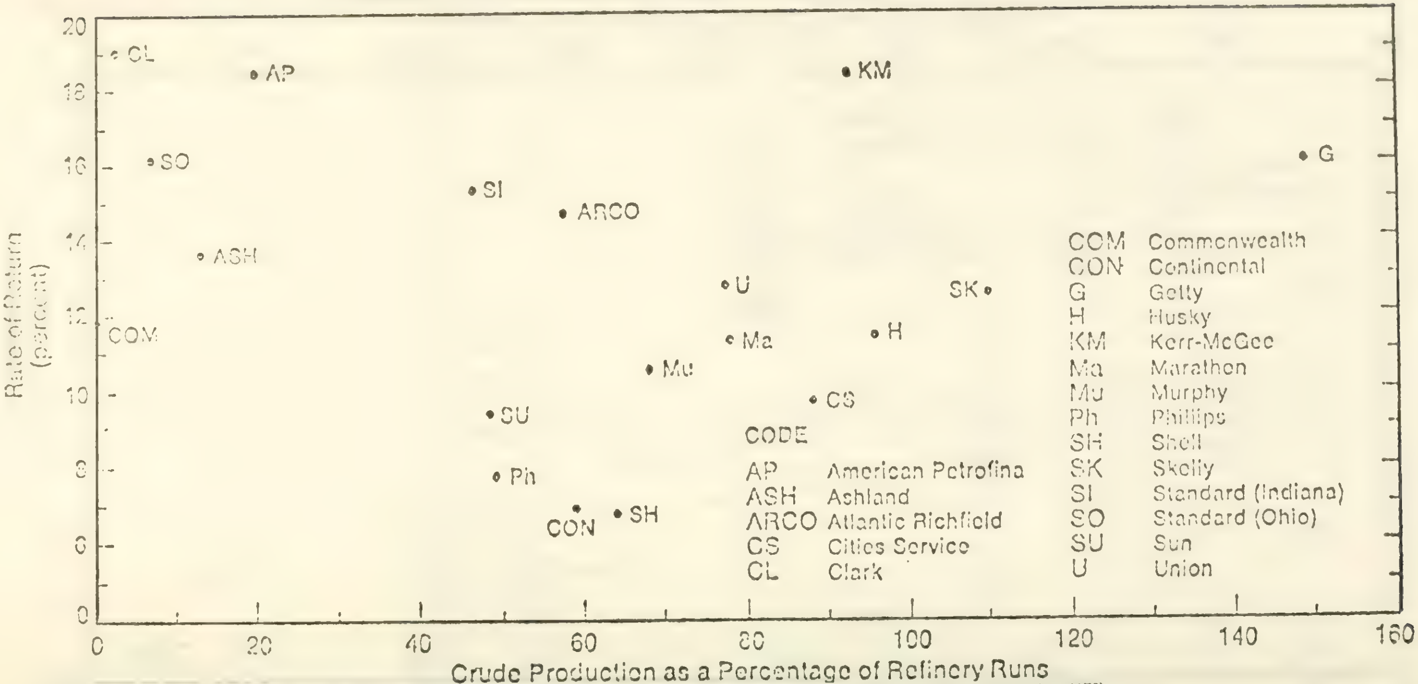
[b] Annual rate of return that would yield same increase in value over the period as realized price appreciation with dividends reinvested. Figures shown are averages of 3 rates of return based on 3 alternative price assumptions: (1) stock purchased at initial year's high, sold at final year's high, with all dividends reinvested at succeeding year's high, (2) stock purchased at initial year's low, sold at final year's low, with dividends reinvested at succeeding year's low, and (3) stock purchased at initial year's closing price, sold at final year's closing price, with dividends reinvested at succeeding year's closing price.

FIGURE 1.—Profitability and "self-sufficiency" of 14 refiners, 1953–72.



Source: Profit data is from table 3; self-sufficiency data is from Rice/Kerr Chemical Service (Laguna Beach, Calif., November 1972).

FIGURE 2.—Profitability and "self-sufficiency" of 19 refiners, 1960–72.



Source: Profit data is from table 3; self-sufficiency data is from Rice/Kerr Chemical Service (Laguna Beach, Calif., November 1972).

To compare profitability of more integrated and less integrated refiners, I have plotted the rates of return against the so-called "self-sufficiency ratio," the volume of crude production divided by refinery runs. Figure 1 shows the 1953 to 1972 period, and Figure 2 shows the 1960 to 1972 period. In both cases there is an absence of correlation. The most profitable firms include crude-poor and crude-rich refiners.

While the de Chazeau-Kahn or "squeeze" thesis never had validity, it could not today even be offered seriously. For it is clear that the thesis depends upon two crucial premises: the depletion allowance and the control of domestic prices by means of market demand prorationing and the Mandatory Oil Import Program. All of these institutions are dead (or, more properly, in the case of market demand proportioning, dormant).

Have small firms been deterred from entering the refining business? The FTC has explicitly stated that barriers to entry into refining are "overwhelming" and that "there has been virtually no new entry into the industry." [50]

It is difficult to find a good yardstick for ease of entry, but perhaps the simplest approach is just to count how many firms have entered and relate the number to the size of the industry. The Bureau of Mines survey of refineries for 1972 indicates that thirty-one refiners had capacities of 50,000 barrels per day or greater.

In 1951 the number was twenty. Nine of these thirty-one companies were not in the refining business in 1950 and ten of the fourteen newcomers (three 1950 companies merged with others in the top twenty) entered by building totally new capacity—not by purchasing existing refineries.[51] While it is hard to construct an absolute standard for ease of entry, the fact that 30 percent of the larger refiners in 1972 were not in the refining business in 1950 does not suggest "overwhelming" barriers to entry.

A recent report of the Federal Energy Administration *Trends in Refinery Capacity and Utilization* (June 1975) suggests that entry by so-called independent refineries will not only accelerate, but actually surpass the expansion of major integrated companies. Planned new refineries, expansions and reactivations from 1975 to 1979 were reported as follows:

PERCENT OF PLANNED NEW CAPACITY [1]

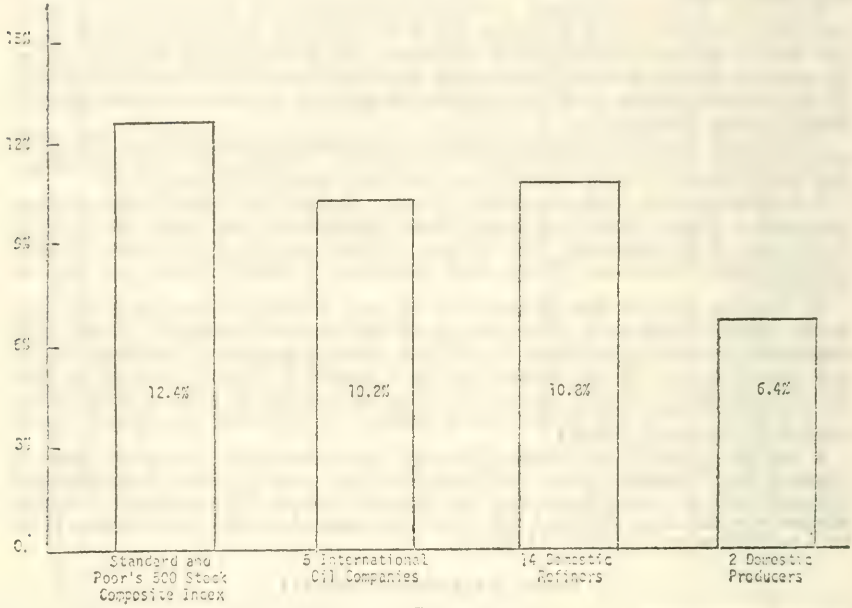
	Majors	Independents
1975	41	59
1976	51	49
1977	54	46
1978	33	67
1979	0	100

[1] Op. cit., pp. 7–10.

[50] Testimony of James T. Halverson of the Federal Trade Commission before the Subcommittee on Antitrust and Monopoly of the Senate Judiciary Committee, 27 June 1973, pp. 21–25.
[51] National Petroleum Refiners Association, Washington Bulletin, 29 June 1973, p. 2.

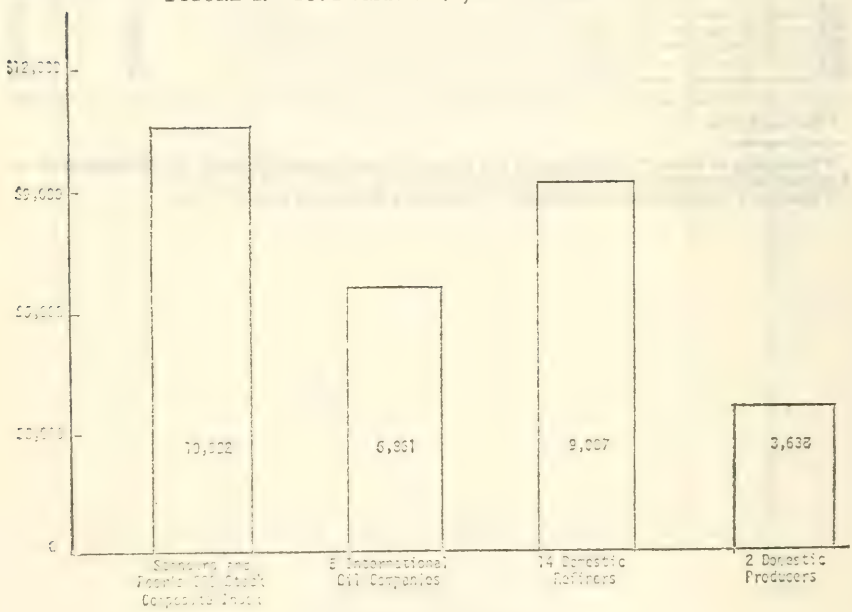
While these plans may not always work out they do not suggest that "independent" companies believe they are being squeezed out.

FIGURE 3.—Shareholders' average annual rate of return 1953–74.



TYPE OF INVESTMENT

FIGURE 4.—1974 value of $1,000 invested in 1953.



TYPE OF INVESTMENT

HAS THE PETROLEUM INDUSTRY REAPED MONOPOLY PROFITS AS A CONSEQUENCE OF VERTICAL INTEGRATION?

We have already seen that integration by refiners into producing does not result in an overall higher level of profits thus contradicting the "refining squeeze" thesis. What about the overall level of profits in the petroleum industry? Do they indicate the presence of monopoly rents? What about the integration of refiners into pipelines? Does pipeline ownership by refiners enhance their profits? These are the questions we now turn to.

The overall level of profits in the petroleum industry up to 1972 were shown in Table V. A more recent tabulation I made for this Committee in testimony on August 6, 1974 takes these profit data up to mid-1974. Table VI shows these later data, while figures 3 and 4 shows some of the findings in bar chart form.These figures and charts confirm the earlier results. An investment of $1,000 in the American international oil companies, or 14 domestic refiners, or 2 domestic producers whose stock was listed on the major stock exchanges would have left the investor worse off than an investment of $1,000 in the S & P 500 Stock Composite Index. Oil company stockholders have not reaped monopoly profits. Indeed, they have faired somewhat worse than the average owner of common stock.

How have stockholders faired where companies integrated into pipelines? It is widely argued, particularly before and within the Congress, that control of pipelines enables their owners to charge exhorbitant tariffs or to deny access to non-integrated firms, thus enhancing their profits. If this thesis is correct we should expect to find that refiners that were highly integrated into pipelines earned above-normal rates of return for their stockholders.

TABLE VI.—STOCKHOLDERS' ANNUAL AVERAGE RATE OF RETURN [1]

[In percent]

Domestic refiners:	1953–74	1960–74	Domestic producers:	1953–74	1960–74
American Petrofina		18.4	Aztec		5.8
Ashland	11.4	8.4	Baruch-Foster		.3
Atlantic Richfield	13.3	14.2	Consolidated		7.3
Cities Service	9.3	7.2	Crestmont		−3.5
Clark		14.1	Crystal		5.5
Commonwealth		14.0	Felmont		4.9
Continental	8.8	5.9	General American	7.5	8.1
Crown		8.9	Louisiana Land		6.8
Getty	13.0	16.6	Reserve		−5.3
Husky		10.5	Superior	5.3	3.2
Kerr-McGee	15.0	16.0	Westates		6.6
Marathon	8.8	8.6			
Murphy		7.8	Average of domestic producers	6.4	3.6
Phillips	10.3	8.3			
Shell	8.0	4.6	Internationals:		
Skelly	9.4	10.7	Exxon	10.0	8.7
Standard (Indiana)	11.3	13.1	Gulf	9.8	5.5
Standard (Ohio)	15.5	15.4	Mobil	9.4	9.4
Sun	6.1	7.3	Standard (California)	8.9	6.2
Union	10.3	11.0	Texaco	10.6	5.3
Average of domestic refiners	10.8	11.1	Average of internationals	10.2	7.0
Standard & Poor's 500 Stock Composite				12.4	8.3

[1] Annual rate of return that would yield same increase in value over the period as realized price appreciation with dividends reinvested. Stock purchased at initial year's closing price, sold at final year's closing price, with dividends reinvested at succeeding year's closing price.

The main counterthesis is obviously that pipeline ownership does not confer monopoly power and is not rewarded by monopoly profits. If the counterthesis is correct there should be no correlation between returns to investors and pipeline control.

A second and stronger counterthesis would argue that firms that control pipelines will provide *lower* returns to their stockholders because ICC regulation and the Elkins Act Consent Decree place limitations on the net income and dividends on pipelines to levels below normal rates of return on production, refining and other investments. Thus, pipeline ownership would lower a firm's overall returns on capital.

The returns to stockholders are measured here by the annual rate of return that would give a stockholder the same change in wealth as realized by stock price appreciation plus reinvested dividends over the period 1953 to 1972.

Table VII shows the rates of return of nineteen domestic refiners over the period 1960 to 1972 and computed indexes of pipeline ownership. The ownership index is equal to the barrel-miles of 1972 trunkline traffic carried by each firm divided by the firm's 1972 average daily refinery runs. Where a firm owns a pipeline jointly with others, traffic is allocated to the firm on the basis of its ownership share. The firms are classified into three distinct groups based on their pipeline ownership: a "low" ownership group consisting of firms whose indexes range from 0 to 3, a "medium" ownership group with indexes between 13 and 29 and a "high" ownership group of two firms each with indexes of 44.

TABLE VII.—PROFITABILITY AND PIPELINE OWNERSHIP OF 19 DOMESTIC REFINERS

Company	Index of pipeline ownership 1972	Stockholders rate of return 1960–72 (percent)
American Petrofina	0	18.5
Commonwealth	0	11.8
Getty	10,000	16.0
Husky	10,000	11.4
Kerr McGee	10,000	18.3
Murphy	20,000	10.5
Skelly	30,000	12.5
Low pipeline ownership group	10,000	14.1
Union	130,000	12.8
Ashland	140,000	13.6
Clerk	150,000	19.0
Sun	150,000	9.4
Atlantic Richfield	170,000	14.6
Shell	170,000	6.8
SOHIO	170,000	16.1
Phillips	200,000	7.8
Standard of Indiana	260,000	15.3
Merathon	290,000	10.2
Middle pipeline ownership group	190,000	12.6
Cities Service	440,000	10.5
Continental	440,000	9.0
High pipeline ownership group	440,000	9.8

Source of pipeline data: "Oil & Gas Journal," special study on 1972 ownership of crude and product trunk pipelines

The ownership indexes show that refiners have chosen to invest in pipelines in greatly varying degrees. American Petrofina and Commonwealth own no pipelines. Relative to their refinery operations Cities Service and Continental control 44 times as much pipeline traffic as the seven refiners in the low pipeline ownership group. Partly this variation is due to the relative locations of production, refining and marketing activities of the different firms. And partly it is due to their different investment policies.

Table VII shows clearly that refiners with the greatest control over pipelines tend to earn *lower* rates of return for their stockholders. While there is considerable variability in rates of return within each group the average rate of return moves consistently downward from 14.1 percent to 12.6 percent to 9.8 percent as we move from low to medium to high pipeline ownership.

The statistical significance of this relationship is confirmed by a simple linear regression of rate of return on the ownership index. The probability of finding so negative a correlation between these variables by chance alone is less than one in forty. And pipeline ownership is found to account for over twenty percent of the variation in refiner rates of return.

The thesis that refiners use pipeline control to earn monopoly profits is sharply contradicted by our data. Instead the data support the view that the rewards to pipeline investments are lower than for other petroleum investments.

The low implicit rate of return on oil pipelines does not necessarily suggest that firms building them have made mistakes. Many of the pipelines built are likely to have been lower risk ventures than the typical investment of a petroleum

company and for that reason less rewarding. (Often these lower risks have been achieved through joint ventures.) High risk, high rate of return pipelines may not have been built because the Interstate Commerce Commission and the Elkins Act Consent Decree do not permit rates to be charged that yield high rates of return. This has great significance for public policy because it means that a whole class of pipelines whose construction would have reduced oil transportation costs and lowered product prices have not been built. In a forthcoming book on oil pipelines I expect to show that regulation of pipelines has probably thwarted the construction of new pipeline capacity and resulted in higher prices to consumers of oil products.

The conclusions of our study of profits and integration are thus threefold:

(1) The petroleum industry as a whole does not earn profits beyond the normal rate of return;

(2) Petroleum refiners that integrate into production are not more profitable than petroleum refiners that do not integrate into production (they do tend to have lower costs but these savings are competed through to the consumer);

(3) Petroleum refiners that integrate into pipelines are less profitable than petroleum refiners that do not integrate into pipelines.

The analysis of profits therefore contradicts any thesis that integration causes "squeezes" and higher profits for integrated refiners.

Appendix A

Three measures of vertical integration have been proposed for the purpose of comparing different industries. Gort, in his *Diversification and Integration in American Industry*, Princeton (1962), measures vertical integration by computing the ratio of employment in a firm's "auxiliary" activities to the total employment of the firm. "Auxiliary" activities are defined as activities other than the "major" activity, which was defined to be the activity in that industry with the largest employment. This measure should be rejected on three grounds. First, while there are purposes for which one may usefully define "activities" in a given industry and compare firms within the industry with regard to their integration into various "activities", one cannot compare "activities" in one industry with "activities" in another industry. The definition of an activity is completely arbitrary. One is inevitably comparing apples and oranges and economic theory suggests using prices or values to handle such comparisons, an approach that Gort implicitly rejects. Second, employment is only one factor of production. In some industries, especially petroleum, capital is equally important. But the contributions of capital are ignored by Gort. Third, what is a "major "activity for an industry doesn't always work out to be a "major" activity for each firm in the industry. For example, some petroleum companies in Gort's study had more employees in production than in refining even though refining was defined to be the "major" activity for the industry.

A measure proposed by Adelman (op. cit.) is the ratio of inventory to sales. Adelman's preference here would be goods in process, thus measuring the length of the production chain as compared to the value of the final product. While this measure might have some merit for comparisons within an industry it is hard to see how different industries could be compared. One of the important determinants of inventory levels, both for finished goods and goods in process, is the variability of demand. Industries with more variable demand would choose larger inventories. But what would this choice have to do with integration?

The other measure proposed by Adelman and used here is the ratio of income to sales. The deficiency in this as a measure of overall integration is that sales are taken as given and then we work back to find out how much the firm contributed to those sales. As a measure of backward integration this is fine. But unless all the firm's sales are to final consumers (as opposed to other firms) we have arbitrarily stopped the firm's potential forward integration. If the products of the firm are sold to other firms for still more value to be added the firm is, to the extent of the value added by downstream firms, unintegrated forward. To measure both forward and backward integration consistently we would have to take as our denominator, not the sales of the firm, but the sales of all the products to which the firm contributed some value. Thus, a gallon of gasoline might be used to deliver steel to a fabricating plant. The value of all of the steel products (and the products of these products and so forth) derived from that steel must be counted in the final sales generated by the firm. For any basic industry, such as steel or petroleum, the denominator is likely to approach the whole gross national product. Clearly,

this is not where we want to go but it is where logic forces us to go if we are to be consistent in measuring forward and backward integration. Stopping anywhere short of this in measuring forward integration is clearly arbitrary.

My solution, if it can be called that, is to acknowledge that we possess, for purposes of meaningful industry comparisons, only a measure of backward integration.

Appendix B

Earnings and Dividend Rankings for Stocks

The relative "quality" of common stocks cannot be measured, as is the quality of bonds, in terms of the degree of protection for principal and interest. Nevertheless, the investment process obviously involves the assessment of numerous factors—such as product and industry position, the multifaceted aspects of managerial capability, corporate financial policy and resources—that make some common stocks more highly esteemed than others.

Earnings and dividend performance is the end result of the interplay of these factors, and thus over the long run the record of this performance has a considerable bearing on relative quality. Growth and stability of earnings and dividends are therefore the key elements of Standard & Poor's common stock rankings, which are designed to capsulize the nature of this record in a single symbol. The rankings, however, do not pretend to reflect all other factors, tangible and intangible, that also bear on stock quality.

The point of departure in arriving at these rankings is a computerized scoring system based on per-share earnings and dividend records of the most recent ten years—a period long enough to measure significant time segments of secular growth, to capture indications of basic change in trend as they develop, and to encompass the full peak-to-peak range of the cycle. Basic scores are computed for earnings and dividends, then adjusted as indicated by a set of predetermined modifiers for growth, stability within long-term trend, and cyclicality. Adjusted scores for earnings and dividends are then combined to yield a final score.

Further, the ranking system makes allowance for the fact that, in general, corporate size imparts certain recognized advantages from an investment standpoint. Conversely, minimum size limits (in terms of corporate sales volume) are set for the three highest rankings, but the system provides for making exceptions where the score reflects an outstanding earnings-dividend record.

The final score for each stock is measured against a scoring matrix determined by analysis of the scores of a large and representative sample of stocks. The range of scores in the array of this sample has been aligned with the following ladder of rankings:

A+	Highest	B+	Median	C	Marginal
A	High	B	Speculative	D	In Reorganization
A−	Good	B−	High Speculative		

Standard & Poor's present policy is not to rank stocks of most finance-oriented companies such as banks, insurance companies, etc., and stocks of foreign companies; these carry the three-dot (...) designation. NR signifies no ranking possible because of insufficient data.

The positions as determined above may be modified in some instances by special considerations, such as natural disasters, massive strikes, and nonrecurring accounting adjustments. And in the oil industry, for example, "cash flow" is taken into account to avoid distortions that might be caused by differences in accounting practices.

Because of the special impact of regulation on earnings and dividends of public utilities, special parameters have been devised for this group, and such factors as capital structure, operating rates, growth of potential service area, regulatory environment, and rate of return are considered.

These scorings are not to be confused with bond quality ratings, which are arrived at by a necessarily althogether different approach. Additionally, they must not be used as market recommendations; a high-score stock may at times be so overpriced as to justify its sale, while a low-score stock may be attractively priced for purchase. Rankings based upon earnings and dividend records are no substitute for analysis. Nor are they quality ratings in the complete sense of the term. They cannot take into account potential effects of management changes, internal company policies not yet fully reflected in the earnings and dividend record, public relations standing, recent competitive shifts, and a host of other factors that may be relevant to investment status and decision.

Source.—Standard and Poor's *Stock Guide*, December 1975.

Senator HRUSKA. Dr. Measday, of staff, has some questions. Will you proceed, Doctor.

Dr. MEASDAY. Thank you, Mr. Chairman.

I just have two or three points. One of them is fairly lengthy, though, Professor Mitchell. This is your finding, that vertical integration is much lower in the oil industry than it is in a number of other industries, and I am not sure that the data support this.

And I think I would raise perhaps four points with you and let you respond to those. The first point, I think, is that the data are 1949 and 1954 data, and I believe that there has been a very substantial increase in backward vertical integration by the major oil companies in the last 20 to 25 years.

The second point is that both Gort and Adelman have used the broad, two-digit industry groups, groups of industries. In the case of petroleum and coal products, this is very largely petroleum refining, but a lot of the other industries are much broader than that. The chemical group, for example, is a group of about 30 industries. The outputs of many of these industries are the inputs of other industries. And consequently, when you bring them all together into one broad group, I think you get a spurious impression of vertical integration.

The third point is that payrolls are the largest element in the margins used in these calculations that show vertical integration, and I would submit that Adelman's table does not show the furniture manufacturers as more integrated than petroleum; rather it shows that furniture manufacture tends to be a labor-intensive industry and petroleum refining, a capital-intensive industry.

Then, the last point is the possibility that, even accepting the methodology, the data may be the wrong data for this. I know in the case of Gort's work, and I am pretty sure—I have not had a chance to review Adelman's article in a number of years now, but I believe also in Adelman's article—they used SIC 2911, Petroleum Refining, and when you do it on this basis, what you do is show that the average petroleum refinery is not vertically integrated, but it tells you very little about the average oil company.

And if you have any reaction to those, I would appreciate it.

Professor MITCHELL. Well, my response would be, first, that I have looked at the literature that exists. If there are papers that show something else, I have not seen them. I am quite willing to accept the point that the data are old. With regard to the point about two-digit industries, I do not know what effect that would have.

As far as the payroll versus capital cost contribution to value added is concerned, I do not see that that really introduces any bias at all. I believe that Adelman's method of measuring the value contributed by a firm is appropriate and whether a firm is capital-intensive or not, I believe his method handles the data properly.

On the last point, with regard to precisely where the raw data come from, I just am not in a position, not having the volume in front of me, to discuss what data were used.

But I think the basic point is that I have looked at the studies that exist. If there are errors in these studies, then someone should do a new study, and show us what these new conclusions are, and if they differ in any way from the old conclusions.

All I have done is to look at the existing literature, and I think I have stated what that literature shows.

Dr. MEASDAY. Thank you, Professor Mitchell.

Now, you quoted the Adelman of 1955, and let me just bring to your attention some of the things that have been said by the Adelman of 1972 in the World Petroleum Market. First, on page 3, he indicates that the idea that the industry should be vertically integrated is one of the myths of the industry. On page 95 of the World Petroleum Market, he says this:

> But even in the lighter markets of the late sixties, the integration of refining with production is a barrier to competition. The exchange of information noted earlier as an inevitable result of the overlapping ventures in the Persian Gulf was greatly reinforced when the producers met also in many markets as refiners and marketers.
>
> They had a close check on their rivals' plans for expansion, and could see whether or not their hopes of cooperative conduct were justified or not.

On page 100, he makes just one more comment:

> Vertical integration with refining marketing precluded any class of large and well-informed buyers who would have helped induce competitive conduct. It also permitted mutual surveillance, where refining provided a check on any given company's producer plants.

In other words, here we have a situation where Professor Adelman apparently feels that vertical integration may be a very real barrier to adequate competitive conduct.

Professor MITCHELL. Well, I think we ought to hear what Professor Adelman himself would say. I cannot speak for him today. I would say, though, that that book was, first, about the international petroleum market. My testimony is devoted to the domestic petroleum market. Secondly, the book was written some time ago, and in fact, it was written over a period of years and addresses itself to an earlier situation. I would think one ought to question Professor Adelman on the current situation.

I find, in my discussions with Professor Adelman about competition and integration in the petroleum industry, that our views are very similar. I cannot, obviously, say what he would say now, when confronted with those questions. I would suggest that you invite him down and ask him what his current views are.

I would stress one important difference, and that is, I am talking about the domestic petroleum industry, and that book is entirely about the international market.

Dr. MEASDAY. Do you believe you can separate the domestic industry from the international market?

Professor MITCHELL. Yes, I think you can. You can talk about domestic producing and domestic refining as distinguished from the international market.

When Professor Adelman is addressing himself to the world petroleum market, he is talking about, overwhelmingly, operations outside of the United States. He is talking about refining in Europe and production in the Persian Gulf, and what-have-you. I do not know whether those statements made at that time, in that book, would still be valid today—after all, that book is a preembargo book, written before OPEC became what it is today. I think one would have to ask those questions again, to see whether the answers would be the same.

Dr. MEASDAY. That would be a good thing to do.

Just one more question, Professor Mitchell. In your prepared statement, you raise the point of whether refining and marketing are less profitable than production, and you say that this is simply untrue. You point out that it would be irrational for a company to invest in refining and marketing assets, if the rate of return were lower than the rate of return in production.

Now, your data based on stock prices supports your position. On the other hand, the First National City Bank for 40 years has published rates of return on stockholders' equity for producing companies and for refining and integrated companies, and from 1942 on—for more than 30 years—1973 was the only year in which the rate of return for producers was not significantly above the rate of return for the refining and integrated companies—the first point.

The second point is that we raised this question with Mr. Tavoulareas yesterday, and he said he has been with Mobil, I think for some 25 years or so, and as long as he could remember, Mobil's rate of return in refining and marketing—rate of return on assets in refining and marketing—has been substantially lower than their rate of return on production.

And I wonder if you would respond to this.

Professor MITCHELL. Well, as I have said before, on an earlier occasion before this committee, I do not accept accounting data as valid data to measure the profitability of petroleum companies, especially producing companies. I think one has to remember that these formulas, the ratio of net income, say, to stockholders' equity, are just rules of thumb. They are accounting conventions. They do not correspond to the economist's definition of profit.

And I believe that the measure that I used, namely, the actual rewards to stockholders over time, not what shows up on balance sheets and income statements, but what shows up in their pockets, offers a valid approach.

In regard to Mr. Tavoulareas' assessment, I assume he is basing his views on some internal accounting data. I do not know what the situation is for Mobil Oil. I have no way of knowing what Mobil Oil looks like internally.

I would question the ability, through accounting data, to separate out, with any precision, the profitability of different sectors of an integrated firm.

What I have done, which I think is the proper way to measure it, is to look at firms that are integrated into producing, into pipelines, into marketing, to different degrees, and simply observe whether they have been more or less profitable. I cannot find any indications, in looking at companies in that way, that refining has been a less profitable activity than producing. And in fact, I conclude that firms that integrate into pipelines are distinctly less profitable. At least, that is what the marketplace says.

Dr. MEASDAY. Thank you. As you know, you and I have, I think, a fairly basic disagreement on how you measure or best measure rate of return, but I think your conclusions will be very cheering to the oil companies' refining and marketing executives faced with some internal questions within those companies. Thanks a lot, Professor Mitchell.

Thank you, Mr. Chairman.

Senator HRUSKA. Mr. Bangert, have you any questions?

Mr. BANGERT. Just one point if you would, Mr. Chairman. Dr. Mitchell, in your prepared statement you cite Arthur Johnson, "Petroleum Pipelines and Public Policy."

I have, I guess, a philosophical question with respect to this study. As you may know, there were four graduate theses contained in the research for Dr. Johnson's book.

Those of George Harmon and John MacArthur were granted by Harvard. Now, in the preface of that book, Dr. Johnson says:

A number of pipeline companies were persuaded to open their records to me and underwrite the cost of research by a grant to the Harvard Graduate School of Business Administration.

Under the terms of the grant, the companies agreed in advance to give me freedom of access to their records, freedom of interpolation in dealing with them and the right to publish the results.

Now, Senator Hart, as chairman of the subcommittee, wrote to the Harvard Graduate School requesting the backup data of these studies, and copies of the dissertations. The university refused to provide that information claiming confidentiality as an indispensable ingredient in the relationship that the graduate school has with corporations.

I guess, as a matter of public policy, my question is: How much weight should be given to this type of material if the backup material, the dissertations, are not made public? Should that kind of academic dissertation be kept confidential when we are dealing in the realm of public policy?

Professor MITCHELL. I do not know anything about the details of Professor Johnson's book. I have read his two volumes on "Oil Pipeline industry." As far as I can see, they are the basic work on the industry.

I was, in fact, so pleased with the quality of the book that I commissioned Professor Johnson to do an article for the American Enterprise Institute on the consequences of the Standard Oil divestiture.

But with regard to that issue, I know nothing of that question.

Mr. BANGERT. As an academic, do you have any feeling with respect to secret dissertations?

Professor MITCHELL. If the data were given to an academic on a confidential basis, on the basis that he would publish conclusion but not release the raw data, I do not see how—If that promise has been made——

Mr. BANGERT. How about the dissertation itself?

Professor MITCHELL. I have never run into that issue before. I would have to reflect on that.

Mr. BANGERT. Is there any worthwhile purpose in having the dissertation if the dissertation becomes public—or is kept secret and is not permitted to become public?

Professor MITCHELL. The purpose of the dissertation is to see whether a student qualifies for a Ph. D. degree.

Mr. BANGERT. I thought it was to advance the state of the art, and the state of knowledge in the area.

Professor MITCHELL. As you know, very few dissertations are published. I cannot really address myself to a question that seems to me so far afield from the issue here at hand. I do not know anything about the specific facts of that case. And, therefore, I really just do not think I should answer questions about it.

Mr. BANGERT. Thank you, Dr. Mitchell.

Senator HRUSKA. Professor Mitchell, you said in your summary statement that three conditions must be met to have the desired consequences of a more competitive industry, and also of lower prices for consumers.

We are concerned with the proof of those three propositions because anyone who proposes a change from the present status must bear the burden of proof. The fact is, is it not well established and without question, that none of the three conditions, which you list in your summary statement, namely:

> The industry must be monopolistic or less than competitive as it stands, with artificially high prices for oil products;
>
> The monopolistic elements in the industry must be contingent upon vertical integration, otherwise vertical divestiture would not destroy the monopoly; and
>
> The benefits of increased competition induced by divestiture must more than offset the loss of the economies of vertical integration.

are aided by presumptions, are they in their favor?

Professor MITCHELL. No. I believe that it is the burden of those who favor vertical divestiture to establish the three premises. I always find myself coming before committees without anything really to rebut.

There is no presumption in favor of those premises being true. I think the research that would have to be done to demonstrate that the premises are true has not been done.

And it is my conviction from research in the field that it could not be done.

Senator HRUSKA. In your prepared statement I read this language:

> A look at the economic literature on vertical integration shows that there is no presumption that vertical integration weakens competition.
>
> The majority of writers believe that vertical integration has no weakening effect on competition and indeed that it reduces the harmful effects of monopoly where monopoly does exist.
>
> These writers include Bork, Liebler, Peltzman, Spengler, Schmalensee, and Warren-Boulton. A smaller number, notably Corwin Edwards and Willard Mueller, believe there are some circumstances where vertical integration permits anticompetitive actions, such as market "squeezes."

And then this very significant statement: "But even these two writers"—that is, Edwards and Mueller—"do not find vertical integration presumptively anticompetitive."

Have you any comment on that; is there any quarrel in any economic circles of academic or other nature that would disagree with that statement?

Professor MITCHELL. No; I do not believe there is. And to finish the paragraph you were quoting——

Senator HRUSKA. I should like to read it, unless you do? Go ahead and read the next sentence.

Professor MITCHELL. I will. Corwin Edwards, who is one of the smaller number of writers who believe there is the possibility of anticompetitive action where vertical integration exists, states that "vertical integration"—now, I am quoting Corwin Edwards—"tells nothing either about power or abuse of power. Hence it implies neither monopoly nor absence of monopoly. Insofar as the monopoly problem is concerned, it is a neutral term."

Mr. Edwards is one of those who believes in the possibility of vertical integration having anticompetitive effects. The other authors cited, the majority I believe, would not even concede that

Senator HRUSKA. I think this is important as we go through these hearings, and receive testimony, because it is easy to engage in generalities and in wishful thinking, and it is easy to promise benefits from something that will occur, if it can occur, if it is practicable to bring about.

But when we face the realities, we have to put on the scales the testimony and the evidence to ascertain whether the burden of those who propose change have been discharged. And it is a burden of showing that the benefits they claim will ensue if divestiture occurs; and that those benefits will be greater than the conditions and the benefits and advantages of the present system. It is that simple, is it not?

Mr. MITCHELL. Yes, I believe so.

Senator HRUSKA. Now let us address the question: Is divestiture practical? It is nice to say, "We will spin off the marketing from the production, or the transportation, or refining".

Is it practicable, having in mind who will buy these stocks in these companies, if an order of divestiture is entered and imposed upon these companies? Having in mind that there would be involved not normal trading in the marketplace—where in the stock exchange there is that free flow and that assertion of the composite judgment of millions of people, that is not what we would be confronted with.

The situation would embrace block sales of tremendous size going into the billions within a relatively short period of time. From that standpoint, who would buy and at what prices; and how promptly?

Has that been considered in the ruminations on this almost metaphysical situation?

Professor MITCHELL. I am not even sure that that is a possibility. That is, of divesting companies in that manner, just putting up assets or parts of the corporations on the auction block.

If you look at how the Standard Oil divestiture was handled, the parts of the company, as they were split off, were simply given to the existing stockholders. That is, the stockholders of the new companies were exactly the same as the stockholders of the original Standard Oil Co.

I am not familiar in detail with the court's problems at that time, but I assume that was done because that was the only practicable method of breaking up the Standard Oil Co.

As far as the approach that you have mentioned of just simply selling off at auction the assets, I would not regard that as a practical way of handling it.

Senator HRUSKA. Well, how would it be that the stockholders would be assigned percentage shares in each of the spun-off elements? Suppose a person had 1,000 shares of, say, Exxon, or 1,000 shares of Mobil, and Mobil is divided into four parts, and those parts are on line; their relative values are not determined; how many shares would he get for the pipeline? How many shares would he get for the production? How many shares would he get for marketing and for refining? How would that be determined?

Professor MITCHELL. The way I believe it might be done is to simply give a proportionate share of all the assets of the new entities equivalent to one share in the old original entity.

The problem is that the new entities then are owned by the same people that own the old entity. And the inclinations of the stockholders of the new entities will be the same as those of the old entity.

I believe what would happen is that even though Mobil Refining was now a separate company from Mobil Production—since they are accustomed to dealing with one another—they would very much attempt to keep dealing with one another.

It would be in the interest of each of the splitup pieces of Mobil Oil to continue on some kind of long-term basis with one another. If that is the case, I am not clear what it is that a proponent of divestiture obtains from the breakup, except that the long-term arrangements made between the separate entities will be much less efficient than arrangements made internally within a company.

I think if you really want to break a company up, and establish new ownership, that you would have to go the route that you spoke of earlier; that is, selling off the pieces to separate companies, separate individuals.

That is, Mobil Production would be owned by one group of stockholders, and Mobil Refining by another group. But I do not see any practical way of accomplishing that as you suggest.

Senator HRUSKA. I return to my original question. Out of that 1,000 shares, how many shares of pipeline company would that man get? How many shares of production would he get? How many shares on a proportionate basis? After all, proportionate to what?

Professor MITCHELL. Well, I can only conjecture as to what they would do. I see the problem you are making. It is a problem.

I would imagine that what the court might do is—or what the administrators of this divestiture would do—would be—say, there were 5 million total shares in Mobil Oil, and one individual held 1,000 shares, that 5 million shares would be issued in each of the new entities, and the individual would be given 1,000 shares for each of those new entities. So he would be in exactly the same position.

Senator HRUSKA. So that the tail of the dog would get as many shares as the head, and as many shares as the body.

Professor MITCHELL. Yes.

Senator HRUSKA. Of course, if the dog could get along without the tail, I imagine the company could get along without pipelines, for example. But what about production? Is not that where the greatest profit would be until he would get the same proportion there that he would get of the other component element?

Professor MITCHELL. Well, I see the problem really quite differently. I see the problem being that once you broke up the company the impulse to operate in an integrated fashion—that is, on a long-term contract basis—would still be there.

That is, Mobil—to take that example again—has benefits from having an integrated firm, from having production, marketing, refining, and transportation all within the same firm, internally organized and administered.

Now, I would imagine that the new entities formed by divestiture would perceive the benefits of long-term arrangements, of dealing with one another as they had in the past, and would attempt to do so. And to that extent, the purpose of the divestiture would be defeated.

If you look at the Standard Oil divestiture, it seems to me that there was a very strong impulse for the companies that were broken up vertically to attempt to integrate again. There must be a reason for that; and I believe the reason is that there are significant operating

economies and capital cost economies that are inherent in vertical integration.

So that when you split companies up, they are going to, one way or another, attempt to acquire those economies again.

You could, I suppose, by passing the right law, defeat them in their attempts to do that. But, of course, all you would accomplish is that you would make the cost of operating the petroleum industry that much higher.

Senator HRUSKA. Well, the refining element would need so much crude oil to refine, where would they go to for that product? If they were barred from going to the present company's source, they would have to go someplace else, would they not?

Professor MITCHELL. Yes; that is correct.

Senator HRUSKA. Hopefully.

Professor MITCHELL. They would have to try to make an arrangement—probably try to make a long-term arrangement with some other supplier, and that long-term arrangement would not be as satisfactory as an internal arrangement with its own production company; that is what I have argued in this paper.

Senator HRUSKA. Well, it is brought with great difficulty and it would be a very prolonged and complex procedure, would it not?

Professor MITCHELL. Oh, yes. It is difficult for me to imagine precisely how this would take place. One can think in the abstract about an industry being broken up into little pieces and somehow all these pieces operating, functioning in an efficient way. But as a practical matter, one has to specify exactly how the industry is to be broken up and exactly how the pieces are to be distributed. And one has to also show that the efficiencies that are now inherent in vertical integration would not be lost.

I do not think that you can show that. What you would have to show is that firms trading in spot markets or on long-term contracts to acquire their crude, can operate just as efficiently as firms that have their own crude supplies. I think that the burden of showing that is on those who advocate vertical divestiture. I do not think they have shown that anywhere.

Senator HRUSKA. Let us approach it from a different viewpoint. We brought the subject up yesterday again. There are vast outstanding corporate obligations on the part of each of these large companies, of each of the 34 or whatever it is. This monopoly, which consists of 34 companies, is something that is mutually exclusive. But on paper it is with a lot of rhetoric, and there is some justification apparently made, the merit of which I cannot see. But nevertheless, here there are outstanding obligations of each of these companies and those outstanding obligations are secured by pledging all of the assets and all of the revenues and all of the incomes of all these component elements.

And some are domestically situated, some are far flung, globally situated. And now divestiture will come. How do you perceive that the pledge of security and collateral for the repayment of those indebtednesses will be achieved?

Professor MITCHELL. I must confess, Senator, I have not tried to think about how one would go about breaking up the industry in such a way as to preserve all these contracts that already exist simply

because I just do not take this proposal seriously. Therefore, I have not gone on to think about how one would go about doing it. I am concerned that those who support doing it present the case. They must show what the benefits are, how you would do it, and what the consequences would be, and to demonstrate those. I do not believe that it has anything to be said for it. I have not gone on and tried to imagine how one would go about doing it. I think those questions should be addressed to those who favor divestiture.

Senator HRUSKA. Indeed. And the record is so barren of any effort to meet those problems. Those who do take this proposal seriously and those who do advocate it are so obsessed with the idea—the millennium will come if we can only divest. And they take it so seriously they do not go into the practical steps and the realistic procedures that must be resorted to in order to achieve divestiture. So, you do not take it seriously. You do not concern yourself with it. Those that do take it seriously say, "Well, that is not the point. The point is that if we do divest, we are going to have Heaven on Earth. And we are going to be much better off." However, the result is, we are in limbo, those of us who turn our attention to this, and we search the records in vain for any practical consideration of how will this divestiture be achieved; how will we deal fairly and constitutionally with outstanding contractual obligations to repay moneys on the bonds and the debentures. Those things apparently fall in that class that a famous cigar-smoking commander of the Stretegic Air Command put in this way: He gave a certain command to his subordinates and some of them started to ask questions about this and that and the other thing. And it was a very stringent demand he made. And he finally became exasperated and said, "Do not bother me with details. I am not interested in details. I am interested only in the result."

And a result of any consequence at all has to be based upon details, millions of them. The record is devoid to this day. All the big volume of transcripts that we have here on these series of bills, the record is devoid until this day, of the necessity of meeting that burden; has not come forward yet.

And of course, upon that will depend a great deal. The compliance and the satisfaction of those three conditions to which you referred in the opening paragraph of your summary statement.

Let me ask you about these exchange arrangements among the petroleum industry. Are you familiar with that?

Professor MITCHELL. Very vaguely, Senator. I have not conducted any research myself into exchange agreements. I know that they exist. I have heard people complain about them, that there is something surreptitious or devious about exchange agreements. I have never investigated them myself. I see no particular reason to investigate them, and so I have simply neglected that.

Senator HRUSKA. Are they illegal?

Professor MITCHELL. Not as far as I know. Exchange agreements, as I understand them, are simply arrangements whereby firms, instead of buying oil and selling oil to and from one another, exchange—they swap. That is, they are barter transactions as opposed to transactions involving money. I see nothing inherently wrong with that.

Senator HRUSKA. It is done, is it not, in the electrical generating business in a big way? I know of no illegal characteristics to it, but it is one of the points of criticism of the present economic structure of the petroleum industry. My question is, however, whatever it is, whether it is illegal or whether it is unpopular or whether it is criticizable, if there is divestiture, would it disappear or would new exchange arrangements occur among those who are split off from the present structure of the petroleum industry?

Professor MITCHELL. I don't see really what exhanges have to do with divestiture. I do not see why the new entities under divestiture would not also have exchange agreements.

Senator HRUSKA. There again, nothing would be obtained, nothing would be achieved by way of a change from the present status, would there, in that regard?

Professor MITCHELL. Not that I can perceive.

Senator HRUSKA. Turning our attention to the field of joint venture, that has the same unsavory flavor to many critics of the present system that they all get into these wicked joint ventures and they get together and they do all kinds of things like drill for oil in the North Sea, and the Gulf, maybe even for uranium or whatever. Now, if there was divestiture, would there still be joint ventures?

Professor MITCHELL. I belive so. In fact, it is likely that there would be more joint ventures with divestiture.

Senator HRUSKA. Why?

Professor MITCHELL. Because I believe that the entities that would result from divestiture would generally be more risky firms. And as a result, I see joint ventures primarily as a method of reducing risk. Therefore, joint ventures would become that much more attractive to the new entities as compared to the existing firms. So I would see joint ventures in drilling, exploration; I would image then that they would increase.

Senator HRUSKA. Getting back to the bond indebtedness of these companies, you have made no particular study of that, so you do not feel qualified to venture further discussion on that point, am I correct in saying that?

Professor MITCHELL. The problem of what you do with contractural obligations such as bonds?

Senator HRUSKA. Yes.

Professor MITCHELL. No, I have not.

Senator HRUSKA. Well, I thank you very much and the subcommittee thanks you for appearing and for adding to the record.

Mr. Banta, do you have any further questions?

Mr. BANTA. No further questions, Mr. Chairman.

Senator HRUSKA. Dr. Measday?

Dr. MEASDAY. No further questions.

Senator HRUSKA. Thank you, sir.

Professor MITCHELL. Thank you.

Senator HRUSKA. Our next witness is Prof. Richard B. Mancke; will you come forward and take your place at the witness table?

Professor Mancke, you have filed with the committee, and in timely fashion, a very splendid, extended, and what appears to be a scholarly and proficient piece of work in this field. You also have filed a sort of

an 8- or 9-page summary of that statement. The prepared statement will be printed in the record in its entirety at the conclusion of your summarized testimony.

You may now proceed with your summary statement.

STATEMENT OF RICHARD B. MANCKE, THE FLETCHER SCHOOL OF LAW AND DIPLOMACY, TUFTS UNIVERSITY

Mr. MANCKE. Thank you very much, Mr. Chairman.

My name if Richard Mancke. My summary is based on two pieces of work. One is a book that is about to be published by the Columbia University Press—a chapter of which deals with oil monopoly problems. The other is some work commissioned by the American Enterprise Institute's national energy project. My testimony today tries to summarize some of the conclusions that appear in those two studies.

The cost of a barrel of average quality foreign crude oil delivered to the U.S. east coast was about $2.30 in 1969; by year end 1975 these costs had soared to about $13. Because presently developed domestic energy supplies are inadequate to fully supply U.S. needs, sharply higher prices for all crude oil products and their substitutes, chiefly coal, natural gas, and uranium, have been an inevitable consequence of this nearly sixfold increase in foreign oil's delivered costs.

Reacting to these soaring energy costs and to the public's growing sense of helplessness and unease, a variety of widely quoted opinion makers, including both elected and appointed public officials, consumerists, editorialists, and even some Persian Gulf potentates, have been quick to resurrect the charge that U.S. energy problems have been caused in large part by the monopolistic abuses of the giant, politically powerful, integrated oil companies.

Are the opinionmakers correct? Have the large integrated oil companies succeeded in monopolizing one or more of these markets? To answer this question, economists customarily examine three types of empirical evidence: First, whether the market structure is more conducive to competition or monopoly. Generally, the most competitive markets have many strong companies and/or can be easily entered by new firms or by firms presently doing business in other, often related, industries.

Second, whether the firms doing business in the relevant market engage in conduct, either explicit or implicit, that facilitates collusive behavior. Common examples of explicit anticompetitive conduct include agreements to fix prices or divide markets and legal or marketing tactics aimed at harassing present or potential competitors. Implicit collusive conduct is most likely in markets with relatively few firms that face similar and well-known costs, and demands. Implicit collusion is almost never found in industries with many firms facing dissimilar and uncertain costs and demands.

And the third type of evidence of monopoly that economists look at is whether most of the firms in the relevant industry earn persistent and otherwise inexplicable high profit rates.

Judged by these three criteria, there can be no doubt that those countries which are members of the Organization of Petroleum Exporting Countries presently possess and exercise enormous

monopoly power. These nations account for over 95 percent of the non-Communist international crude oil trade, and they meet regularly to fix international oil prices.

Moreover, because most of the world's known low-cost oil supplies are located within their borders, and it will take until the eighties before large new non-OPEC sources can be found and developed, at present, OPEC members have little to fear from entry threats.

Finally, the $11-plus price charged for nearly all of the crude oil sold by the OPEC countries in early 1976 is 10 to 100 times greater than its total unit production cost.

Because, relative to current and projected levels of demand, the OPEC countries presently have huge quantities of low-cost oil reserves, the persistence of price-cost differentials of this magnitude offers conclusive proof that the OPEC countries are monopolistic sellers of crude oil in international markets.

Even the crudest empirical evidence establishes overwhelmingly that the major oil-exporting countries are enormously successful monopolists. Therefore, my submission to this committee addressses a more interesting and, in terms of its likely effect on shaping the direction of future domestic energy policy, a more important question: Do the major oil companies also exercise significant monopoly power in any of the important markets in which they presently do business?

My just completed study of oil monopoly issues for the American Enterprise Institute reaches five significant factual conclusions:

(1) Many firms, both large and small, participate in each stage of the oil business, and entry into this business appears to be relatively easy.

(2) Many firms, both large and small, produce natural gas and/or coal, and entry into these industries is relatively easy.

(3) There is no evidence that oil companies are presently engaged in wide-ranging collusive practices.

(4) The large oil companies have not enjoyed abnormally high-profit rates that have persisted over a long period of time.

(5) The special squeezing arguments frequently advocated to explain alleged oil monopoly practices are implausible because adoption of the hypothesized tactics would have cost the large oil companies, that is, the alleged squeezers, billions of dollars annually to implement.

To summarize, after examining a great variety of empirical evidence, my submission concludes that the oil companies no longer possess observable monopoly power in any important energy market.

Moreover, the economic structures of the key stages of the oil business are such that the successful exercise in monopoly power is virtually impossible unless the oil companies receive direct governmental assistance.

Though these conclusions may surprise the public, they are neither surprising nor new to most academic economists who have more than a passing acquaintance with both the oil industry and the field of industrial organization. These "experts" are nearly unanimous in agreeing that the oil companies possess little or no independent monopoly power.

Before concluding with the discussion of the high cost because a large portion of energy policymakers' efforts are aimed at remedying the nonexistence oil company monopoly problem, I would like to

discuss four factors which might explain the sharply different assessments of the public and of the presumably unbiased academic experts.

The first factor explaining this perceptual difference is that economic theory suggests that relative size, not absolute size, is an important determinant of whether the firms in an industry are likely to possess monopoly power.

Review of U.S. antitrust case law reveals that the courts have also stressed the importance of relative firm size while downplaying the role of absolute firm size.

Nevertheless, precisely because the actions of large firms are so visible, the American public has always equated absolute size with monopoly power. The major oil companies are among the very largest and most visible companies doing business in the United States.

Huge accounting profits, but not high profit rates, are an inevitable corollary of large absolute firm size. This makes these companies obvious targets for public criticism.

The second factor is that nearly 80 percent of all domestically produced crude oil comes from just four States, Texas, Louisiana, California, and Oklahoma. Just two States, Louisiana and Texas, presently produce nearly 75 percent of all domestic natural gas. Because of their proximity to the petroleum sources, citizens of these States pay lower prices for petroleum. They also pay significantly lower State taxes, because the oil companies pay large rents to the oil States.

Because citizens from other regions, especially the Northeast, pay higher petroleum prices and receive none of the revenues, they are often angry. The large oil companies are obvious, though inappropriate, targets for this anger.

The fact that some Texans have earned huge fortunes in the oil business also offends popular sensibilities. Anyone who has seen the cliched depiction of oil barons in recent movies, such as "Oklahoma Crude" or the "Drowning Pool," cannot doubt that many Americans believe that oil men are innately evil.

The third factor that explains the different perceptions of the public and of the academic experts, is that two Government policies—State enforced market demand prorationing and federally enforced oil import quotas—did result in above competitive prices throughout the fifties and sixties.

I wish to emphasize that I was one of the harshest critics of both of these policies at that time. However, the situation changed dramatically in the early seventies because the U.S. domestic oil supplies were no longer sufficient to meet most domestic demands and the price of foreign oil began its seemingly inexorable sharp rise.

Proration has had almost no restrictive effects on output since 1972, and oil import quotas were abolished by a Presidential Executive order in May 1973.

In sum, the domestic oil industry no longer benefits from any Government-sponsored monopolistic restriction. It is my opinion that those who continue to blast the industry for enjoying the fruits from such restrictions are either ignorant or deliberately deceitful.

The fourth factor explaining the different perceptions of the public and of the experts is that, as a direct result of the Organization of Arab Petroleum Exporting Countries—OAPEC—embargo, the United

States has suffered enormously higher energy costs, a sharp deterioration of its oil security and worldwide political humiliation.

The American public has quite naturally sought a villain upon which blame for our present energy problems can be placed. The large oil companies offer an inviting target. The fact that there is no evidence that these companies presently possess any monopoly power is of little importance to the oil companies' accusers.

Professor M. A. Adelman alluded to this problem when he told another Senate committee in January 1975:

> Sheik Yamani and his colleagues knew that the oil companies are in the public doghouse and that millions of people will call a price hike a reduction if you can only make the companies out as villains.
>
> The public attitude toward the multi-national oil companies brings me back to the bad old days of Joe McCarthy. Then, many of our people, frustrated, angry, and a bit fearful of the unreachable leaders of the monolithic Communist bloc, went out determined to find and bash an enemy at home.
>
> Today, unable to do anything about high oil prices, many of our citizens are inclined to take it out on the multinational oil companies.

To conclude, there is no evidence that the large vertically integrated oil companies are presently exercising monopoly power in any of the four major stages of the oil business: The production of crude oil, the transportation of crude oil and refined products, the refining of crude oil, and the marketing of refined oil products. Indeed, all available empirical evidence supports the opposite inference. Hence, there is neither economic nor legal justification for forcing the integrated oil companies to divest one or more of their major operations. Nevertheless, this has not stopped numerous Congressmen, including several prominent Presidential aspirants, from backing legislation designed to force oil company divestiture on the grounds that this will help to alleviate our present energy problems by eliminating their alleged major cause, the oil companies' monopoly power.

Absent congressional naivety, the real aim of this intellecutally dishonest legislation seems dubious. It is politically popular to attack the monopolistic oil companies. There are at least three reasons for opposing political pandering of this kind.

The first objection is a practical one. If adopted, divestiture is likely to result in higher rather than lower fuel prices, since oil companies will have higher costs because divestiture eliminates some real integration economies. Moreover, merely raising the threat of divestiture discourages oil companies from making investments of the magnitude necessary if the United States is to reduce its oil import dependence.

The second objection is that the United States presently faces several very real energy policy questions requiring serious and sustained public attention. For example, how can we reduce our still-growing dependence on insecure and inexpensive oil imports? How can we reduce the environmental and health risks attributable to higher production and consumption of domestic fuels like coal, oil shale, and nuclear power? And how can the United States guarantee American consumers that they will have access to adequate energy supplies without paying unnecessarily high prices?

Finding answers to these questions is of vital importance to all Americans. Both Congress and the President ought to be examining and, at some point, legislating and adopting policies designed to

achieve such valuable goals as reducing the monopoly power presently exercised by the OPEC countries, reducing U.S. petroleum demands, and increasing U.S. petroleum supplies.

Congress has been especially remiss about tackling these tasks. Instead, many Members have found that it is far easier to rant about the nonexistent oil company monopoly problem. Thus, more than 2 years since the start of the OAPEC oil embargo, the U.S. Congress, in my opinion, has avoided passing a single measure that holds promise of substantially alleviating any of our energy problems. Americans can only hope that this congressional neglect of our real energy problems does not prove fatal.

The third objection to the oil company divestiture legislation is that, though it will have a shortrun political payoff, in the long run it will make no contribution to solving our real energy problems and thus the public will eventually realize that it has once again been duped, and, as a result, there will be further deterioration in public trust in our political institutions. Obviously, this objection is not restricted to politically attractive attempts to force oil company divestiture. It also applies to the many simplistic decisions that ultimately culminated in the debilitating disasters of Vietnam and Watergate and in the well-intentioned but too ambitious social legislation that was passed under the rubric of the Great Society. Today, most politicians proudly claim to be statesmen-practitioners of a new, more realistic, and much more honest politics. Their advocacy of what I regard to be intellectually dishonest, but politically popular legislation aimed at punishing oil companies raises serious doubts as to the truth of their claims.

That concludes my summary statement, Mr. Chairman.

[The prepared statement of Professor Mancke follows. Testimony resumes on p. 1916.]

Prepared Statement of Prof. Richard B. Mancke, The Fletcher School of Law and Diplomacy, Tufts University

COMPETITION IN THE OIL INDUSTRY

The cost of a barrel of average quality foreign crude oil delivered to the U.S. East Coast was about \$2.30 in 1969; by year end 1975 these costs had soared to about \$13 (not including a \$2 per barrel tariff). Because presently developed domestic energy supplies are inadequate to fully supply the United States' needs, sharply higher prices for all crude oil products and their substitutes—chiefly coal, natural gas, and uranium—have been an inevitable consequence of this nearly six-field increase in foreign oil's delivered costs.[1] Reacting to these soaring energy costs and to the public's growing sense of helplessness and unease, a variety of widely quoted opinion makers—including both elected and appointed public officials, consumerists, editorialists, and even some Persian Gulf potentates—have been quick to resurrect the charge that the United States' energy problems have been caused in large part by the monopolistic abuses of the giant, politically powerful, integrated oil companies.

COMPETITION VS. MONOPOLY

Whenever a product's price exceeds the cost of producing an additional unit, producers will find it profitable to produce and sell that unit. Unfortunately

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[1] When the price of a product rises, cost-conscious consumers turn to cheaper substitutes. If supplies of these substitutes cannot be expanded to fully satisfy the new demands, their prices will be bid higher. At any specified time the United States can expand its domestic energy production above previously planned levels only if there are substantial new investments. These will take many years to begin production. (E.g., even if the goals of Project Independence are met, the U.S. will remain a substantial oil importer in 1985.) Hence, absent price controls, higher prices for imported oil will lead to similar hikes in the prices of oil substitutes.

for them, if each producer follows what he perceives to be his self-interest and produces all units for which price exceeds cost, industry output will expand, causing prices to fall and profits to dwindle. The price fall will stop only when the profit incentive to expand output ceases. This level of output will be reached only when price equals the total costs of producing additional units.

The process just described is called competition. Realizing that the ultimate result of competition is lower profits for every firm in the industry, producers of almost any product desire to avoid it. To do so each much act to limit its sales. However, each will do so only if it has good reason to expect its competitors will do likewise. Monopoly power is being exercised when the members of an industry are successful in reducing their output and thereby keeping their product's price higher than the cost, including a competitive return to equity investors, of producing additional units. In the absence of governmental assistance, monopoly power is likely to be stronger the fewer the number of firms presently in or soon likely to enter an industry, the easier collusion, and the less aggressive the industry's customers in searching for lower-price alternatives.

The Sherman Antitrust Act provides the foundation for most of the United States' federal antitrust policies. Its two famous substantive provisions are Section 1, which prohibits contracts, combinations, and conspiracies in restraint of trade, and Section 2, which prohibits monopolization, attempts to monopolize, and combinations or conspiracies to monopolize. Section 1 focuses on the defendants' market conduct. A firm will be found guilty of violating Section 1 only if the plaintiff can prove that it has engaged in anti-competitive agreements (e.g., price fixing) with other firms in the industry. Section 2 focuses on the structure of the market that the firm is alleged to monopolize. In order to prove a Section 2 violation it is usually necessary to demonstrate that the market structure is conducive to monopolizing acts. Table 1 summarizes the key market structure parameters in the major Section 2 cases. Special notice should be given to the fact that each of the firms found guilty of violating Section 2 accounted for 75-plus percent of the relevant product market, had few large competitors, and experienced little or no entry by competitors into its market.

Large vertically integrated companies participate in all facets of the oil business: they produce and sell crude oil from domestic and, frequently, foreign sources; they transport crude oil from the wellhead to refineries and ship finished oil products to retailers; and they produce and sell a great variety of refined products and petrochemicals. In addition, they are also substantial suppliers of other kinds of energy. Are the "opinionmakers" correct? Have the large integrated oil companies succeeded in monopolizing one or more of these markets? To answer this question economists customarily examine three types of empirical evidence:

1. Whether the market structure is more conducive to competition or monopoly. Generally the most competitive markets have many strong companies and/or can be easily entered by new firms or by firms presently doing business in other, often-related, industries.

2. Whether the firms doing business in the relevant market engage in conduct, either explicit or implicit, that facilitates collusive behavior. Common examples of explicit anti-competitive conduct include agreements to fix prices or divide markets and legal or marketing tactics aimed at harassing present or potential competitors. Implicit collusive conduct is most likely in markets with relatively few firms that face similar and well-known costs and demands. Implicit collusion is almost never found in industries with many firms facing dissimilar and uncertain costs and demands.

3. Whether most of the firms in the relevant industry earn persistent and otherwise unexplainable high profit rates.

Judged by these three criteria, there can be no doubt that those oil-exporting countries which are members of the Organization of Petroleum Exporting Countries (OPEC) presently possess and exercise enormous monopoly power. These nations account for over 95 percent of the non-Communist international crude oil trade.[2] They meet regularly to fix international oil prices. Moreover, because most of the world's known low-cost oil supplies are located within their borders, and it will take until the 1980's before large new non-OPEC sources can be found and developed, at present OPEC members have little to fear from entry threats.

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[2] For elaboration see Mancke, Squeaking By, Chapters 3 and 6.

Finally the $11-plus price charged for nearly all of the crude oil sold by the OPEC countries in early 1976 is ten to one hundred times greater than its total resource cost.[3] Because, relative to current and projected levels of demand, the OPEC countries presently have huge quantities of low-cost oil reserves, the persistence of price-cost differentials of this magnitude offers conclusive proof that the OPEC countries are monopolistic sellers of crude oil in international markets.

Even the crudest empirical evidence establishes overwhelmingly that the major oil-exporting countries are enormously successful monopolists. Therefore, the remainder of this paper addresses a more interesting and, in terms of its likely effect on shaping the direction of future domestic energy policy, more important question: do the major oil companies also exercise significant monopoly power in any of the important markets in which they presently do business? After assessing the evidence—most of which is collected from published government or oil company sources—I conclude that the oil companies no longer possess measurable monopoly power in any important energy market. Moreover, the economic structures in all stages of the oil business are such that the successful exercise of monopoly power is virtually impossible unless the oil companies receive direct governmental assistance.

THE EVIDENCE: MARKET STRUCTURE AND CONDUCT IN THE MAJOR FACETS OF THE DOMESTIC PETROLEUM INDUSTRY

Domestic Crude Oil.—The oil industry is built upon a foundation of crude oil.

SHERMAN ACT SEC. 2 PRECEDENTS COMPARED

I. MAJOR CASES FINDING DEFENDANT TO VIOLATE SEC. 2

Case	Entry	Number/strength of competitors	Reasons for success	Defendant's market share
Alcoa (1945)	None	No domestic competition.	Patent monopoly, cartels and premption of raw materials.	80 to 90 percent of industry for 25 yr.
United Shoe (1953)	Only 1 significant entrant.	No significant competitors.	Merger, acquisition, discriminatory 10-yr leases.	85 percent of market for 40 yr.
American Tobacco (1946).	None in 8 yr	Several small competitors.	Conspiracy to fix prices and exclude competitors.	75 percent of cigarette market for 40 yr, declining slowly.
Grinnell (1966)	None effective	No significant competitors.	Mergers and agreements not to compete.	87 to 91 percent of market.

II. MAJOR CASES FINDING DEFENDANT NOT TO VIOLATE SEC. 2

Case	Entry	Number/strength of competitors	Reasons for success	Defendant's market share
du Pont (1956)	Substantial	Many in flexible wrappings; only 2 in cellophane.	Competitive achievement and willingness to take risks.	75 percent of cellophane, 20 percent of flexible wrappings.
Hughes Tool (1954).	Some successful entrants.	4 significant competitors.	Best product and excellent service	75 percent of roller bit industry and stable for 20 yr.

Source: Cravath, Swaine & Moore "Pretrial Brief for International Business Machines" (submitted to the U.S. District Court, Southern District of New York, Jan. 15, 1975), pp. 4–5.

There are three steps in crude oil production: exploration, development, and operating. Exploration refers to the search for new oil reserves in places where its presence is suspected but unsure; development is the installation of the production facilities that are necessary before previously discovered oil reserves can be extracted; operating takes place when crude oil from previously developed reserves is actually produced. Compared with either other natural resource based heavy industries—such as steel, aluminum, or copper—or large manufacturing

[3] The price was in excess of $11 per barrel for each barrel of oil sold. The total resource costs ranged between 10 cents and $1 per barrel. In most cases oil companies paid all production costs; in addition, they paid the exporting countries royalties and taxes in excess of $11 per barrel.

industries—such as automobiles, computers, or electrical equipment—American crude oil production is not highly concentrated in the hands of just a few giant firms. Instead, there are more than 20 large companies (annual petroleum sales greater than $1 billion) that are significant participants in the crude oil industry. Tables 2 and 3 summarize, respectively, the Federal Trade Commission's (FTC) and Standard Oil of Indiana's assessments of the American crude oil industry's present large firm concentration. According to the FTC, the largest producer of crude oil in the United States, Exxon, accounted for less than 10 percent of all production in 1969; the FTC credits the eight largest crude oil producers with barely more than 50 percent of all U.S. production. Indiana Standard's data suggest that the FTC's estimates of the leading firms crude oil production shares may be too high. Instead, they show that the eight largest crude oil producers' share of total U.S. production peaked at only 42.3 percent in 1970 and fell slightly over the next few years. Because of both data limitations and legitimate disagreements as to what are the "correct" definitions to use when calculating production shares, all such estimates are necessarily imprecise. Because the FTC is currently trying to prove that the eight largest integrated U.S. oil companies (Indiana Standard is number seven in crude production) do exercise substantial monopoly power in most phases of the oil business, it seems reasonable to infer that the crude oil production share estimates presented in Tables 2 and 3 offer plausible upper and lower bounds. However, regardless of whether the reader judges the low or high production share estimates more plausible, the key fact deserving emphasis is that this industry is far less concentrated than most other American manufacturing or mining industries that contain one or more giant firms.

Besides the presence of many large firms, there are literally tens of thousands of small companies that presently compete in the American crude oil industry. The role played by small companies is especially crucial in the vital exploration phase. In 1974 small companies (defined as not in the largest 30) drilled 86.2 percent of all exploratory wells.[4] The chief reason for the large number and vitality of small companies is the absence of significant scale economies in producing crude oil from onshore Lower 48 sources. Hence, new entry into this part of the oil business is easy. Dean James McKie has described the most common ways that firms enter the oil industry:

"Many oil-producing companies originated as successful wildcat enterprises. While a few firms may begin with a large supply of capital and immediately undertake an extensive drilling program, the typical firm got its start through a series of fortunate single ventures, often involving exploratory deals with established major or independent firms. New corporations and partnerships are frequently budded from the existing ones.

"* * * A geologist or petroleum engineer may gain enough experience on his own, making good use of the associations he has built up in the industry * * * An employee of a drilling contractor may work up from platform hand to superintendent. Once known to purchasers of drilling services and sellers of equipment, he finds it relatively easy to set up his own firm * * * After operating as a contract driller for some time, he may be willing to put one of his rigs into a wildcat venture on a speculative basis * * * In this way drilling contractors frequently become independent producers * * * "

"Another way to enter oil and gas exploration is via brokerage. Exploration enterprise swarms with middlemen anxious to arrange producing deals * * * A speculative broker may arrange a prospecting deal among other parties * * * and usually retains for himself a small interest in the venture. Since the technical training and apprenticeship are not strictly necessary, this route is crowded with hopeful shoestring promoters along with the experienced entrepreneurs".[5]

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[4] "Independents Claim Big Exploration Role," *Oil and Gas Journal* (April 21, 1975), p. 58.
[5] James McKie, "Market Structure and Uncertainty in Oil and Gas Exploration," *Quarterly Journal of Economics*, LXXXIV (1960), p. 569.

TABLE 6-2.—COMPANY SHARES OF DOMESTIC NET CRUDE OIL PRODUCTION AND PROVED DOMESTIC CRUDE OIL RESERVES

[In percent]

Company	Share of domestic production (in 1969)	Share of domestic proved reserves (in 1970)
Exxon United States	9.76	9.92
Texaco	8.47	9.31
Gulf	6.78	8.97
Shell	6.08	5.98
Socal	5.31	8.97
ARCO	5.11	7.48
Standard of Indiana	5.09	8.46
Mobil	3.94	4.87
Getty	3.38	3.85
Union	2.88	3.18
Sun	2.47	2.67
Continental	2.21	2.77
Marathon	1.64	2.37
Phillips	1.55	3.55
Cities Service	1.28	2.49
Amerada Hess	1.04	2.49
Tenneco	.99	.90
Skelly	.88	1.09
Superior	.74	1.03
Top 4	31.09	37.17
Top 8	50.54	63.88

Source: U.S. Federal Trade Commission, "Preliminary Federal Trade Commission Staff Report on Its Investigation of the Petroleum Industry," (June, 1973), tables II-1 and II-2.

TABLE 3.—CONCENTRATION IN U.S. NET CRUDE OIL PRODUCTION

	As a percent of total U.S. production		
	1965	1970	1974
4 largest firms	24.6	26.5	25.9
8 largest firms	39.0	42.3	42.1

Source: Presentation by Ted Eck, Standard Oil of Indiana, Reprinted in Bureau of National Affairs, "Energy Users" Report" (Nov. 13, 1975), p. A-19.

The twin facts that the domestic crude oil industry embraces tens of thousands of viable firms and that new entry continues to be easy offer strong support for the inference that the economic structure of this market is effectively competitive. However, one caveat is necessary. To acquire rights to produce crude oil from either the Alaskan North Slope or the U.S. Outer Continental Shelf presently requires an initial investment totaling millions of dollars. The importance of oil supplies from these two frontier areas will grow rapidly over the next several years. While the growing importance of crude oil from frontier sources will make it more difficult for small, one-man companies to enter the business, it seems unlikely to seriously diminish effective competition. Presently, the nineteen large oil companies listed in Table 2 are all active participants in one or both of the United States' promising frontier oil regions. Many smaller oil companies are also active in these areas. In addition, many large industrial companies and public utilities (e.g., Bethlehem Steel, Peoples Gas, Reynolds Industries, and Union Pacific Railroad) have also invested large sums in the search for frontier oil. I suspect that no other large American industry enjoys the participation of so many large and wealthy firms.

When an industry has many firms and entry is easy collusive behavior becomes nearly impossible unless all of the industry's major firms are tied together by explicit price-fixing and market-sharing agreements. Such agreements would violate Section 1 of the Sherman Act. There is no evidence that they exist in the American crude oil industry.

Another instance in which crude oil producers would find collusion highly profitable would be if they could agree to limit the amounts they must bid to acquire production rights to potentially commercial Outer Continental Shelf (OCS) and Alaskan North Slope oil lands. Rights to individual 5–6,000 acre tracts are auctioned to the firm or individual submitting the highest sealed bid. Since 1970, more than $12 billion has been paid to the U.S. government by firms acquiring OCS tracts. If they colluded the oil companies would agree among themselves, prior to bidding, which firm would make the high bid on each tract thought likely to contain commercial quantities of petroleum. In addition to the fact that no direct evidence of such collusion has ever been offered, there are two reasons for inferring that it has never taken place. First, oil companies take elaborate and expensive precautions to insure that their competitors don't learn their bidding intentions. To illustrate, in the week just prior to Alaska's 1969 sale of petroleum rights to state-owned lands located near the giant Prudhoe Bay field, one oil company required all of its concerned employees to remain together in a private rail car that was shuttled back and forth across Western Canadian. Second, the winning bid is often several times higher than that offered by the closest competitor.[6] In sum, all available market structure and industry conduct evidence supports the inference that the market for American-produced crude oil is effectively competitive in the mid-1970's.

Transportation.—Crude oil products are the most versatile and readily transportable major type of energy. Hence, they tend to be consumed far away from the wellhead and therefore transportation is a key stage in the oil business. All of the United States imports of crude oil and refined products, with the exception of those from Canada, are shipped via tanker. Within the U.S. approximately 75 percent of crude and 27 percent of products is carried by pipeline; the remainder is carried by tankers, barges, and trucks.[7]

Oil companies own as much as one-third of non-U.S. private tanker capacity. The remaining capacity is chartered, either under short-term (spot) contracts or long-term contracts averaging five years duration. Economists who have studied the tanker market agree that it is one of the most competitive in the world.[8] Thus, Professor M. A. Adelman has written:

Each individual ship available for spot charter is, in effect, like a separate firm and the worldwide market allows no protected enclaves * * * In any given month, several dozen ships are offered for oil company use all over the world by several hundred owners, none with over 5 percent of total tonnage. Tacit collusion would be impossible, and no attempt at open collusion has been made since World War II * * * [The] "spot" charter market therefore seems purely competitive.

The time-charter market is linked to the spot market at one end, and at the other to the cost of creating new capacity. Here entry is open and cheap * * * Moreover, there are no strong economies of scale in ship operations. Many owners have only one ship * * * But to say that many competent firms cluster on the boundaries of the industry, and that minimum capital requirements are low, is to say that entry is easy and market control impossible.

With many ships available in the short-run, and easy entry for the long-run what possibility is left for control in the meantime? Little if any in theory, and none can be observed in practice. Tankship owners, oil companies and independents cannot control the long-term supply even in concert, for anyone contemplating a production or refining investment and needing the transport services has time to charter a ship or buy a new one.[9]

Since the 1973–74 oil embargo, there has been a new trend in the world tanker market: many OAPEC countries have begun to acquire tanker fleets. Already the charge is being made that OAPEC tankers pose a new threat to the security of oil importers because they may refuse to deliver oil. Since the trend to increased OAPEC tanker ownership seems likely to continue, this charge will be heard with

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[6] It is interesting to contrast the bidding for oil land rights with the bidding during the 1950's by manufacturers of electrical equipment on multi-million dollar orders for electric turbines. The electrical equipment manufacturers did collude prior to the "secret" bidding. Thus, the winning bid (in this case the low bid) was always only slightly less than the bid offered by competition.

[7] U.S. Federal Trade Commission, "Preliminary Federal Trade Commission Staff Report on Its Investigation of the Petroleum Industry" in U.S. Senate Permanent Subcommittee on Investigations of the Committee on Government Operations, *Investigation of the Petroleum Industry* (Washington: G.P.O., July 12, 1973), p. 23.

[8] See M. A. Adelman, *The World Petroleum Market*, chapter 4 and Zenon Zannetos, *The Theory of Oil Tankship Rates* (Cambridge, Mass.: M.I.T. Press, 1966). R. Mancke, *The Failure of U.S. Energy Policy*, pp. 122–125 discusses the Jones Act—a law that raises shipping costs between two or more U.S. ports.

[9] M. A. Adelman, *The World Petroleum Market*, pp. 105–106.

increasing frequency. It should be ignored. The oil exporting countries will have monopoly power as long as they can act together to limit crude oil sales. Their control over access to crude oil production already gives them this power. Hence, even if they could monopolize the tanker market (and for the reasons discussed above this is unlikely) it would not enhance their total monopoly power.

The United States is traversed by an extensive network of crude oil and refined petroleum products pipelines. Gathering lines collect crude oil from wells and transport it to larger diameter main trunklines that go to one or more refineries. Product pipelines carry gasoline and other products from the refinery to local or regional storage facilities. Because large pipelines are expensive to build, most are owned directly by individual major oil companies or by several majors participating in joint ventures.[10] Because of the physical fact that a cylinder's volume (hence crude oil throughput) increases proportionately faster than its circumference (hence capital costs), pipelines enjoy extensive scale economies; i.e., larger pipelines have lower unit transportation costs. The twin facts that in any specified geographic area the pipeline business is relatively concentrated and that pipelines enjoy extensive scale economies suggest that established pipeline companies may face little competition.[11] In part for these reasons, interstate pipelines come under the "common carrier" regulatory jurisdiction of the Interstate Commerce Commission.

The Interstate Commerce Commission (ICC) has the responsibility for insuring that the interstate pipelines do not discriminate against non-owners. It attempts to do this by regulating rates and assuring that all shippers are granted access. Nevertheless, many non-pipeline owners have charged that the ICC has been derelict in performing this duty. They maintain that a variety of business practices have been used to deny them access to common carrier lines. These alleged practices include requiring unnecessarily large minimum-size shipments, granting non-owners irregular shipping dates, limiting available storage at the pipeline terminal, and imposing unreasonable product standards upon pipeline customers.[12] Scheduling pipeline shipments is not a trivial task—to minimize unit costs the line must be operated continuously near full capacity but, to prevent product contamination it is necessary to separate shipments of different products. For these and similar reasons, the unit costs of providing pipeline services to a large customer are less than if the same service is provided to a small customer. Since any interstate pipeline is forced by the ICC to charge all customers the same rates for the same services, it would be surprising not to find instances when a pipeline's owners—who tend to be relatively small shippers—might disagree over the necessity for different business practices. In order to get redress for the alleged inequities, the customers would complain to the ICC. Absent contrary empirical evidence, the fact that the ICC—which has a tradition of issuing regulations that effectively subsidize high-cost shippers—has found few of these complaints to be justified, supports the inference that the large oil companies are not presently exercising substantial monopoly power in the pipeline industry.

Refining.—The oil refining industry transforms crude oil into more useful petroleum products. Table 4 lists the principal products of U.S. refineries—gasoline accounts for nearly 50 percent of the total. As of 1 January 1974 the United States had 132 oil refining companies; 17 had a daily capacity in excess of 200,000 barrels.[13] Table 5 lists the FTC's estimates of the share of domestic gasoline refining capacity of the 20 largest companies in 1970. The largest, Exxon, accounted for less than 10 percent of the total. Table 6 shows that between 1965 and 1975 the eight largest refiners accounted for roughly 55 percent of the industry's total capacity. When compared with other major American heavy industries, oil refining is not highly concentrated.

Depending on their complexity and size, new oil refineries cost from $50 to $500-plus million. Many, including the Federal Trade Commission, infer that such high capital requirements constitute a significant barrier to new entry. The evidence summarized in Table 7 suggests that the significance of entry barriers has been exaggerated. Sixty firms have chosen to become oil refiners since 1950. Events immediately following the elimination of oil import quotas in May 1973 also fail to support the inference that high capital requirements make it nearly

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[10] U.S. Federal Trade Commission, "Preliminary Staff Report," p. 23.

[11] Pipelines may face significant competition from alternative modes of transportation, especially tankers and barges.

[12] U.S. Federal Trade Commission, "Preliminary Staff Report," p. 26.

[13] Leo Aalund, "Refining Capacity Registers Largest Nickel and Dime Jump in History," *Oil and Gas Journal* (April 1, 1974), p. 76.

impossible for firms to enter the oil refining business. As Professor Leonard Weiss has testified in his role as an expert witness for the Antitrust Division of the Justice Department in U.S. vs. I.B.M.:

"I mentioned . . . the number of firms, including some independents I have never heard of, who set out to build refineries between May and July of 1973, and it is just astounding—and these were one hundred million dollars and many one hundred million dollar investments—that shook my belief in capital requirement as a high barrier to entry quite a bit.[14]

TABLE 6–4.—*Principal products of U.S. refineries in 1969*

Product:	*Percent*
Gasoline	45.5
Distillate fuel oil	21.6
Jet fuel	8.2
Residual fuel oil	6.8
Kerosene	2.6
Lubricants	1.7

SOURCE.—U.S. Federal Trade Commission, *Preliminary Federal Trade Commission Staff Report on Its Investigation of the Petroleum Industry* (1973), p. 18.

TABLE 5.—TOP 20 COMPANIES SHARE OF U.S. GASOLINE REFINING CAPACITY, 1970

Company	Share (percent)	Cumulative shares
Exxon U.S.A	9.22	9.22
Texaco	9.19	18.41
Indiana Standard	7.94	26.35
Shell	7.69	34.04
SOCAL	6.72	40.76
Gulf	6.47	47.23
Mobil	6.30	53.53
ARCO	6.25	59.78
Sun	4.54	64.32
Phillips	4.24	68.56
Union	3.24	71.80
SOHIO	3.09	74.89
Cities Service	2.26	77.15
Ashland	2.11	79.26
Continental	2.03	81.29
Marathon	1.92	83.21
Getty	1.76	84.97
Tenneco	1.35	86.32
Clark	1.21	87.53
American Petrofina	.85	88.38

Source: U.S. Federal Trade Commission, "Preliminary Federal Trade Commission Staff Report on Its Investigation of the Petroleum Industry" (1973), table II–3.

TABLE 6.—CONCENTRATION IN U.S. REFINING OPERATING CAPACITY (1965–74)

	As a percentage of total U.S. operating capacity		
	1965	1970	1974
4 largest firms	30.4	31.8	29.8
8 largest firms	53.5	56.7	53.0

Source: Presentation by Ted Eck, Standard Oil of Indiana. Reprinted in Bureau of National Affairs, "Energy Users' Report" (Nov. 13, 1975), p. A–19.

[14] Leonard Weiss, *Deposition for U.S. v. I.B.M.*, United States District Court Southern District of New York (June 11, 1974), pp. 354–55.

TABLE 7.—NEW ENTRANTS INTO U.S. REFINING (1950–75)

	Number of new entrants
1950–72	47
1972–75	13
Total	60
Backgrounds of 23 largest entrants during 1950–72 prior to becoming refiners:	
Crude oil producers	8
Refined products marketers	6
Acquisition of integrated operation	1
Antecedents not readily available	8
Total	23

Source: Presentation by Ted Eck, Standard Oil of Indiana. Reprtined in Bureau of National Affairs, "Energy Users' Report" (Nov. 13, 1975), p. A–20.

Because of the OPEC embargo and the resulting sharp fall in projections of future U.S. petroleum demands, many of these plans to build new refineries were subsequently canceled. Nevertheless, as of year-end 1974 eleven companies were still planning to complete new U.S. refineries in the mid-1970's. They are listed in table 8. The diversity of these firms does not support the contention that large firms in the American refining industry enjoy the protection of high entry barriers.[15]

Marketing.—Marketing is done by jobbers who purchase refined oil products and supply retail dealers. Many jobbers are completely independent from refiners and dealers; others own their own retail outlets, and others are simply marketing extensions of the oil refiners. Also jobbers may carry branded or unbranded products. Table 9 presents the FTC's estimates of the national gasoline market shares of the leading 25 marketers in 1973. The largest, Texaco, had less than 8 percent of the market. Table 10 shows that the share of the eight largest refined product marketers has fallen by more than 9 percentage points since 1964. A rising market share for independents accounts for most of this fall. After examining evidence of this type the Federal Trade Commission concluded: Gasoline marketing is the most competitive area of the petroleum industry and has the largest number of independent companies." [16] Absent evidence of collusive conduct in regional or local markets, I concur.

THE EVIDENCE: MARKET STRUCTURE, CONDUCT AND PERFORMANCE IN INTERNATIONAL OIL MARKETS

Available evidence on both the structure of the world crude oil market and the conduct of the international oil companies supports the judgments that, in the years prior to the formation of the Organization of Petroleum Exporting Countries in 1960, the major international oil companies enjoyed significant but eroding monopoly power.[17] However, by the early 1970's their monopoly power had disappeared.

Prior to the mid-1950's virtually all of the oil traded internationally was pro-produced by the subsidiaries of eight companies: British Petroleum (BP), Compagnie Francaise des Petroles (CFP), Exxon, Gulf, Mobil, Royal Dutch Shell, Standard Oil of California (Socal), and Texaco. In the Middle East these companies were joint participants in a variety of crude oil producing and marketing consortia. Moreover, encouraged by the American, British, and French governments, the charters of these consortia included clauses severely restricting competition between the eight. Two examples will suffice to illustrate this point.

[15] Further evidence on the viability of small refiners can be inferred from the fact that in 1973 refiners with less than 75,000 barrels daily capacity accounted for 39.2 percent of total expansion. See Leo Aalund, "A Close Look at Added New Refining Capacity in U.S.," *Oil and Gas Journal* (April 18,1974), p. 33.
[16] U.S. Federal Trade Commission, "Preliminary Staff Report," p. 21.
[17] See M.A. Adelman, *The World Petroleum Market*, chapters 5–7; and Subcommittee on Multinational Corporations, United States Senate Committee on Foreign Relations, *Multinational Oil Corporations and U.S. Foreign Policy* (Washington: G.P.O., January 2, 1975).

TABLE 6-5.—NEW U.S. REFINING CAPACITY SET FOR 1975-77

Company	Date set	Location	Added capacity (barrels per day)
Exxon U.S.A.	1976	Baytown, Tex.	250,000
	1975	Baton Rouge, La.	14,000
	1975	Bayway, N.J.	30,000
ECOL Ltd.	1976	Garyville, La.	200,000
SOCAL	1975	Perth Amboy, N.J.	80,000
	1975	Pascagoula, Miss.	40,000
	1976	Richmond, Calif.	175,000
	1976	El Segundo, Calif.	175,000
Dow	1977	Freeport, Tex.	100,000
ARCO	1976	Houston, Tex.	95,000
Champlin	1976	Corpus Christi, Tex.	60,000
Clark	1975	Hartford, Ill.	45,000
Vickers	1975	Ardmore, Okla.	30,000
Texaco	1977	Lockport, Ill.	25,000
Douglas Oil	1975	Paramount, Calif.	15,000
Energy Co. of Alaska	1977	Fairbanks, Alaska	15,000

Source: Leo R. Aalund, "Inflation and Uncertainty Cut U.S. Refining Buildup," "Oil & Gas Journal" (Nov. 25, 1974), p. 37.

TABLE 9.—SHARE OF U.S. GASOLINE MARKET—1973

Company	Percent of U.S. market	Cumulative shares	Company	Percent of U.S. market	Cumulative shares
Texaco	7.97	7.97	Marathon	1.52	68.49
Exxon	7.64	15.61	Ashland	1.48	69.97
Shell	7.47	23.08	Clark	1.25	71.22
Indiana Standard	6.90	29.98	SOHIO	1.23	72.45
Gulf	6.75	36.73	Hess	1.00	73.45
Mobil	6.49	43.22	BP	.81	74.26
SOCAL	4.78	48.00	Tenneco	.78	75.04
ARCO	4.37	52.37	Murphy	.66	75.70
Phillips	3.92	56.29	Getty	.65	76.35
Sun	3.67	59.96	American Petrofina	.63	76.98
Union	3.05	63.01	Skelly	.60	77.58
Continental	2.30	65.31	Triangle	.57	78.15
Cities Service	1.66	66.97			

Source: Harold Wilson, "Exxon and Shell Score Gasoline Gains," "Oil & Gas Journal" (June 3, 1974), p. 78 cites result of the Lundberg Survey.

TABLE 10.—CONCENTRATION IN PETROLEUM PRODUCT MARKETS

	As a percentage of total			
	1964	1968	1970	1974
U.S. refined product sales:				
4 largest firms	34.8		33.8	31.2
8 largest firms	61.7		57.0	52.3
U.S. gasoline sales:				
4 largest firms			30.8	29.9
8 largest firms			55.0	51.9
Market share of independents:				
Marketing		19.8		29.0
Refining		26.8		29.8

Source: Presentation by Ted Eck, Standard Oil of Indiana. Reprinted in Bureau of National Affairs, "Energy Users' Report" (Nov. 13, 1975), p. A-19.

1. American oil companies first entered the Middle East by acquiring a share in the Iraq Petroleum Company from BP, CFP, and Shell. "The price of establishing the first American presence in the Middle East was the 1928 Red Line Agreement which obligated the consortium members not to compete against each other within the area of the old Ottoman Empire." [18] Exxon and Mobil—who acquired the entire American interest in the Iraq Petroleum Company in the

[18] Subcommittee on Multinational Corporations, *Multinational Oil Corporations and U.S. Foreign Policy*, p. 36.

early 1930's—were subject to the anti-competitive strictures of the Red Line Agreement until 1947.

2. In 1933 Socal obtained an exclusive 60-year oil concession in Saudi Arabia. Desiring both additional financing and marketing facilities, Socal took in Texaco as an equal partner and formed a new subsidiary named Caltex. Caltex's Aramco subsidiary discovered and began to develop enormous low cost crude oil reserves in Saudi Arabia. The appearance of this oil on the world market following the conclusion of World War II threatened the market power of the other six established international majors. The prospects for Exxon and Mobil, whose only Middle East oil came from their jointly held minority interest in the Iraq Petroleum Company, were especially bleak. Both firms needed more oil to supply their Western European affiliates but they were prevented from acquiring new Middle East sources by the Red Line Agreement. Hence, they feared that "Caltex * * * would be able to use Aramco to build up a marketing organization no other firm could compete against. Exxon and Mobil therefore decided to offer their markets and their capital to Caltex in return for a piece of Aramco." [19] After considerable negotiation, Caltex accepted the Exxon-Mobil offer.

Broadening Aramco's ownership to include two companies that had access to other sources of crude oil, both within and outside the Middle East, seriously reduced the competitive impact of Saudi oil. Aramco, when solely owned by Caltex, had sold its oil at cost (which was far below the prevailing world price) to Socal and Texaco. Both companies then reaped high profits when refined products made from it were sold in Western European markets. Having access to lower cost crude oil, the Caltex partners threatened to offer severe price competition in refined products markets that had traditionally been dominated by the other international majors. Shortly after Exxon and Mobil assumed partial ownership of Aramco, they persuaded Caltex to agree that Aramco should be transformed into a profit-maximizing entity that would sell oil to its owners at the world price. The net result of this change was to eliminate the special incentive for Socal and Texaco to expand refined products sales and thus competition in world oil markets was reduced.

Beginning in the mid-1950's several companies (both American and foreign) joined the eight majors in producing Middle Eastern crude oil. Because the most promising Persian Gulf oil concessions were under the nearly exclusive ownership of the eight majors, the new competition was, initially, on a very small scale. This was not the case in Libya. Not wanting to be controlled by an single economic entity, that country's 1955 Petroleum Law established a fragmented pattern of oil concessions. Many American companies that had previously had no significant oil reserves acquired Libyan concessions. Several of these companies had discovered and developed large oil reserves by the late 1950's. Libyan developments, coupled with rising European sales of Soviet crude oil and natural gas, resulted in a rapid increase in the level of competition between firms that produced and sold crude oil on world markets.

World oil markets were glutted by 1959—the international oil companies responded by cutting their posted prices. Supplies were too great; the glut continued; posted prices were cut a second time in 1960. In return for permission to produce and sell a nation's oil the oil companies pay royalties and taxes to the host country. These payments were a fraction of the posted price. Hence, the decision by the international majors to meet competition by cutting their posted prices meant that the oil-exporting countries would receive lower per barrel revenues. Naturally, these countries were incensed by the oil companies' "arbitrary" price cuts. Meeting in 1960, representatives of five countries (Iran, Iraq, Kuwait, Saudi Arabia and Venezuela), which together supplied 80 percent of all oil entering world trade, established OPEC. Throughout the 1960's OPEC was able to prevent further cuts in the posted price of crude oil. Nevertheless, because world oil markets continued to be glutted, the price at which oil actually sold fell throughout the 1960's. Thus, oil that would have sold for about $1.50 per barrel at Persian Gulf ports in 1960 could be bought for about $1.10 per barrel in 1969.[20] Roughly 90 cents of this total price was paid as royalties or taxes to the oil exporting nation; the oil company had to pay for all production costs out of the remaining 20 cents. Hence, by the late 1960's the international oil companies could not have been earning sizeable monopoly profits.

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[19] *Ibid.*, p. 7.
[20] M.A. Adelman, *The World Petroleum Market*, pp. 160–91.

By the early 1970's several hundred producing companies were participating in the world petroleum market (see Table 11). Also, as the OPEC members gained power and successfully demanded that they be given partial ownership over their oil, the number of effective restrictive agreements between the majors dwindled rapidly. In sum, because of sharp changes in both the structure of the world petroleum market and in the conduct of the industry's firms, the available evidence no longer supports the inference that the large international oil companies continue to exercise significant monopoly power in the world crude oil market. The fact that they lack monopoly power explains why after paying royalties and taxes most Persian Gulf producers presently retain only 25 cents on each barrel of crude oil sold.[21] This covers their exploration, development, and operating costs but does not permit monopoly profits. Hence, it is fatuous to blame present and near-future international energy problems on the monopolistic practices of the international oil companies.

THE EVIDENCE: STRUCTURE AND CONDUCT IN THE MARKETS FOR OTHER ENERGY PRODUCTS

Most large oil companies are also significant suppliers of natural gas; in addition, many are substantial participants in the coal industry and some are making preparations to enter the business of enriching uranium. Are these products sold in monopolistic markets? Does the fact of substantial oil company participation have deleterious implications for competition?

Natural gas.—Crude oil and natural gas are found in similar, frequently the same, geological structures and tend to be produced by methods utilizing roughly the same technology. Thus, crude oil and natural gas are often produced as joint products and, even when they are produced separately, there are real economies that are only available to firms having the capability of producing both products. Hence, it was inevitable that large crude oil producers also became large producers of natural gas.

TABLE 11.—INDEPENDENT OIL COMPANIES OVERSEAS (OTHER THAN LARGEST 7)

	Number	Percent of concession area
1953	28	35
1972	330	69

Source: Presentation by Ted Eck, Standard Oil of Indiana. Reprinted in Bureau of National Affairs, "Energy Users' Report" (Nov. 13, 1975), p. A–20.

Most natural gas is sold at the wellhead to large natural gas pipeline companies. These companies, in turn, ship natural gas to customers (usually local natural gas distribution companies or large firms) in either intrastate or interstate markets. Because the Federal Power Commission (FPC) enforces strict price ceilings on all gas sold in interstate markets, the arbitrary distinction between intrastate and interstate natural gas is, nonetheless, important. Since the early 1960s the FPC has held the price of interstate natural gas far below the price of all competitive fuels. Thus, in 1975 when the delivered cost of imported crude oil (including a $2 per barrel tariff) was more than $14 per barrel, the FPC allowed new reserves of natural gas to be sold to interstate customers at 50 cents per thousand cubic feet (Mcf). At this price natural gas would be competitive with crude oil priced at only $2.80 per barrel. Such a low price, coupled with natural gas' low-polluting properties, encourages soaring demands. But, the low price also discourages firms from making the investments necessary to discover and develop new natural gas reserves sufficient to prevent the depletion of already developed reserves. As a result of FPC-mandated below-market clearing prices, most areas of the United States have suffered severe and worsening natural gas shortages since the late 1960s. Only customers located in states blessed with substantial natural gas that could be sold at higher unregulated intrastate prices have not suffered these costly shortages.[22]

[21] "Divestiture Heat Still on in the Senate," *Oil and Gas Journal* (November 17, 1975), p. 43. Citing Exxon senior vice-president William Slick who stated that Exxon made 35 cents/bbl on light Arabian crude early in 1973, when crude was selling for $2/bbl, compared to profits of 25 cents/bbl today from $11.50 market prices.

[22] In 1975, new reserves of ntural gas sold at about $2.00 per Mcf in intrastate markets.

One of the principal justifications for natural gas wellhead price controls was that absent price regulation its producers would be able to exercise substantial monopoly power. Market share data of the type summarized in Table 12 casts doubt on this justification—the natural gas industry is not highly concentrated. Even more persuasive are the numerous detailed studies by Professor Paul MacAvoy and colleagues.[23] All of these studies buttress MacAvoy's 1962 conclusion that—"Studies of most field and supply markets in Texas, Louisiana, Oklahoma, etc. indicate the presence of systematic competition or monopsony throughout the period in which regulation was proposed. The problem to be solved by regulation seems not to have existed." [24] Economists are a notoriously disputatious lot. Nevertheless, I know of no reputable academic economist who presently argues that natural gas producers possess substantial monopoly power. In sum, because they have been used to justify the FPC's unfortunate regulation of natural gas well head prices, the totally unsupported assertions that the business of producing this product is monopolized must be judged a costly myth.

Coal.—More than 3,500 companies presently produce coal in the United States. Table 13 lists the 20 largest coal producers in 1972. Together these 20 firms accounted for only 55 percent of total domestic production. The 20 largest coal producers have diverse backgrounds. Besides "coal companies" their ranks include companies that are chiefly known for their interests in other industries. For example, Peabody Coal, the industry's largest producer, is presently owned by Kennecott Copper. Most steel companies, which are among the nation's largest coal consumers, are substantial coal producers—U.S. Steel and Bethlehem Steel were the nation's sixth and seventh largest producers in 1972. Some electric utilities (most notably, the industry's giant, American Electric Power) produce a significant fraction of their coal needs. And, several oil companies are also substantial coal producers.

TABLE 12.—COMPANY SHARES OF NATURAL GAS SOLD TO INTERSTATE PIPELINES, 1970

Rank—Producer	Volume (mcf)	Percent of total	Cumulative percentage
1 Exxon	1,300,642,683	9.0	9.0
2 Gulf Oil	813,738,549	5.6	14.6
3 Shell Oil	785,667,041	5.4	20.0
4 Pan American Petroleum (Standard of Indiana)	767,439,589	5.3	25.3
5 Phillips	707,235,036	4.9	30.2
6 Mobil Oil	650,890,489	4.5	34.7
7 Texaco	607,433,789	4.2	38.9
8 Atlantic Richfield	561,540,880	3.9	42.8
9 Union Oil of California	548,896,648	3.8	46.6
10 Continental Oil	461,297,727	3.2	49.8
11 California Co., Division of Chevron	367,213,888	2.5	52.3
12 Sun Oil	361,622,934	2.5	54.8
13 Alberta & Southern Gas (Canadian)	304,529,422	2.1	56.9
14 Tenneco	252,971,722	1.8	58.7
15 Cities Service	243,511,899	1.7	60.4
16 Superior Oil	240,211,285	1.7	62.1
17 Westcoast Transmission (Canadian)	223,257,230	1.5	63.6
18 Trans-Canada P.L. Ltd	199,655,647	1.4	65.0
19 Pennzoil Producing	184,440,676	1.3	66.3
20 Getty Oil	173,480,911	1.2	67.5
Total, top 20	9,502,706,323		
Total, other	4,938,030,621		
Grand total	14,440,736,944		

Source: FPC, Sales by Producers of Natural Gas to Interstate Pipeline Companies, 1970.

[23] Paul MacAvoy and Robert Pyndyck, *Price Controls and the Natural Gas Shortage* (Washington: American Enterprise Institute, 1975); Stephen Breyer and Paul MacAvoy, *Energy Regulation by the Federal Power Commission* (Washington: Brookings Institution, 1974).

[24] Paul MacAvoy, *Price Formation in Natural Gas Fields* (New Haven: Yale University Press, 1962), pp. 252–53.

TABLE 13.—TOP 20 COMPANIES SHARE OF U.S. COAL PRODUCTION IN 1972

Rank—Group	Tonnage (bituminous and lignite) (tons)	Percent of total	Cumulative percentage
1 Peabody Coal Co	71, 595, 310	12. 1	12. 1
2 Consolidation Coal (O)	64, 942, 000	11. 0	23. 1
3 Island Creek Coal (O)	22, 605, 114	3. 8	26. 9
4 Pittston Coal	20, 639, 020	3. 5	30. 4
5 Amax	16, 380, 303	2. 8	33. 2
6 United States Steel (S)	16, 254, 400	2. 8	36. 0
7 Bethlehem Mines (S)	13, 335, 245	2. 3	38. 3
8 Eastern Associated Coal Corp	12, 528, 429	2. 1	40. 4
9 North American Coal Co	11, 991, 004	2. 0	42. 4
10 Old Ben Coal Corp. (O)	11, 235, 910	1. 9	44. 3
11 General Dynamics	9, 951, 263	1. 7	46. 0
12 Westmoreland Coal Co	9, 063, 919	1. 5	47. 5
13 Pittsburgh & Midway Coal Co. (O)	7, 458, 791	1. 3	48. 8
14 Utah International	6, 898, 262	1. 2	50. 0
15 American Electric Power	6, 329, 389	1. 1	51. 1
16 Western Energy Co	5, 500, 700	. 9	52. 0
17 Rochester & Pittsburgh	5, 137, 438	. 9	52. 9
18 Valley Camp Coal	4, 777, 674	. 8	53. 7
19 Zeigler Coal Co	4, 201, 164	. 7	54. 4
20 Midland Coal	3, 899, 478	. 7	55. 1
Total, top 20	320, 428, 813	55. 1	
Total, others	269, 571, 187	44. 9	
Total, U.S. production	590, 000, 000		

Note: O denotes owned by a oil company; S denotes owned by a steel company.

Source: Thomas Duchesneau, "Competition in the U.S. Energy Industry" (Cambridge, Mass.: Ballinger Publishing 1975) p. 75

In addition to the fact that coal production is not concentrated, there are two reasons for concluding that present producers possess little or no monopoly power. First, most coal is consumed by either electric utilities or steel companies. These companies are large and sophisticated consumers. Because they burn huge quantities of coal, the find it profitable to search for the best buy. They actively solicit competitive bids rather thad meekly accepting prices quoted by coal companies. Moreover, because many electric utilities and steel companies are themsleves substantial coal producers, they would respond to monopoly coal prices by expanding their own production. Second, the U.S. has enormous presently undeveloped but economic coal reserves. Most of these are owned by federal and state governments. But huge quantities are also owned by existing coal producers, several Indian tribes, and the large western land grant railroads. Most of these undeveloped reserves have not been leased. Existing coal companies can expect substantial new entry when they are.

Available structure and conduct evidence supports the conclusion that the coal industry is highly competitive and that oil company participation has not resulted in reduce competition. Nevertheless, one caveat is necessary. There are two ways that a firm can enter an industry—either by starting a grass roots coal-mining operation or by acquiring an existing firm. Because grass roots entry raises the number of firms in the industry, many economists prefer it to entry by acquisition. Oil companies have used both methods to enter the coal business. However, those oil companies that are presently the largest coal producers—Continental, Occidental, Sohio, and Gulf—all took the less desirable acquisition route.

Because petroleum products are close substitutes for coal in many uses, the oil companies' coal acquisitions might also be opposed on the grounds that they are really horizontal mergers and therefore violate Section 7 of the Clayton Act. The Justice Department's Antitrust Division—subscribing to the rather narrow view that coal and petroleum are sold in different markets—has not felt that Section 7 is not applicable. Hence, these acquisitions have not been opposed. Because of the rather high degree of inter-fuel substitutability, I feel that the Antitrust Division was remiss in failing to challenge these acquisitions. However, if one agrees with my position, logical consistency also compells him to admit that the crude and refined oil market share data summarized earlier overstates the importance of the large oil companies in the combined coal-oil market. This, in turn, reduces even further the already low probability that the large oil companies possess the power to set monopoly prices.

Enriched Uranium.—Enriched uranium 235 fuels all of the United States' commercial nuclear reactors. Three federally owned gaseous diffusion plants presently produce all enriched uranium. These huge plants—the largest would cost over $6 billion to replicate—were initially used to provide the uranium necessary for nuclear weapons. Present enriching capacity will be inadequate to supply anticipated 1980s nuclear fuel needs. President Ford has proposed allowing privately-owned firms to build the necessary new enriching capacity. To enable them to raise financing for the enormous expenditure, he has proposed federal guarantees of up to $8 billion.

Four groups of companies have proposed building uranium enrichment plants. Uranium Enrichment Associates (UEA)—a joint venture of Bechtel, Goodyear Tire, and the Williams Companies—has proposed an enormous $6 billion gaseous diffusion plant. The other companies—Centar (a partnership of Atlantic-Richfield and Electro Nucleonics), Garrett (a Signal Oil subsidiary), and Exxon Nuclear (an Exxon subsidiary)—propose building plants that would use the commercially untested centrifuge enrichment process. Each of these plants would cost about $1 billion and have roughly one-third the capacity of UEA's proposed diffusion plant.

The present cost of enriched uranium is only a small fraction of the cost of coal or residual fuel oil on an energy content basis. This fact, coupled with the fact that the enormous size of uranium enrichment plants entails that this industry must be highly concentrated at least through the 1980s, raises the spectre that the enrichment companies may enjoy considerable monopoly power. The danger is real but exaggerated. Compared to coal or oil-fired electricity generating plants, nuclear plants take much longer to build and are far more expensive to construct. Thus, an electric utility would choose to build new nuclear generating capacity only if lower costs for enriched uranium (compared with costs for comparable quantities of coal or fuel oil) more than offset the sharply higher capital costs. Presently electric utilities in most areas of the country appear to prefer new coal-fired generating capacity to new nuclear-fired capacity. This suggests that enriched uranium producers will not be able to raise prices substantially above present real levels. In sum, because of the higher costs of new nuclear electricity generating capacity, the difference between the cost of enriched uranium on the one hand and the cost of coal or fuel oil on the other hand does not offer a valid measure of the price hikes potentially available to enriched uranium producers.

THE EVIDENCE: OIL COMPANY PROFITABILITY

Available market structure and conduct evidence supports the unpopular inference that the American oil industry is more competitive than most other comparable large American manufacturing or mineral industries. Available evidence, summarized below, on the oil industry's profitability also supports this inference.

Total Profitability.—The best test of the successful exercise of monopoly power is the persistence of abnormally high industry profits over a long period of time.[25] Judged by the most common measure—the after-tax rate of return on equity investments—profits of most American oil companies were below the average for all U.S. industrial firms for the ten years prior to 1973.[26] Largely as a result of embargo-caused higher crude oil prices, oil company profits rose sharply in 1973 and 1974. Nevertheless, even then they were only slightly higher than the average earned by all U.S. manufacturing companies. Moreover, they began to fall off in the last quarter of 1974 and this trend accelerated in 1975. The fact that unusually high profits were earned for a period of less than two years that coincided with a period of unanticipated supply shortages is not evidence of monopoly.

Accounting profitability measures are only loosely related to the economist's profit definition and thus the evidence just cited should be regarded as suggestive but not conclusive. Professor Edward Mitchell has described several problems plaguing the accounting profit data:

[25] Because of successful innovations, etc., individual firms can earn "above-normal" profits for long periods of time even though they possess no monopoly power. However, it is unlikely that most firms in an industry would enjoy persistent "above-normal" profits unless the industry were characterized by unusual risks or the member firms enjoyed monopoly power. For elaboration see Richard B. Mancke, "Interfirm Profitability Differences: A Reinterpretation of the Evidence," *Quarterly Journal of Economics* (May 1974), pp. 181–93.

[26] See *Oil and Gas Journal* (February 18, 1974) p. 38. For more elaboration see Edward Erickson and Robert Spann, "The U.S. Petroleum Industry," in Edward Erickson and Leonard Waverman, *The Energy Question*, vol. 2 (Toronto: University of Toronto Press, 1974), pp. 6–12.

"Expenditures that should be capitalized, such as advertising and research and development, frequently are not. Depreciation charges usually reflect simple arithmetic rules rather than actual changes in the value of assets. Future income not yet confirmed by sales contracts is ignored. Even without these problems, the procedure of estimating the rate of return on capital by the ratio of income to stockholders' equity * * * can give widely disparate answers for a given true rate of return depending upon the particular time pattern of cash flows".[27]

TABLE 14.—OIL INDUSTRY STOCKHOLDERS' AVERAGE ANNUAL RATE OF RETURN[1] AND STANDARD & POOR'S 500 STOCK COMPOSITE INDEX, 1953–72 AND 1960–72

[In percent]

Refiners	1953–72	1960–72
Domestic:		
American Petrofina		18.5
Ashland	13.8	13.6
Atlantic Richfield	12.8	14.6
Cities Service	10.5	9.7
Clark		19.0
Commonwealth		11.8
Continental	9.0	6.9
Crown		9.0
Getty	12.3	16.0
Husky		11.4
Kerr-McGee	14.6	18.3
Marathon	9.7	10.2
Murphy		10.5
Phillips	9.4	7.8
Reserve		−5.2
Shell	9.9	6.8
Skelly	10.2	12.5
Standard (Indiana)	11.7	15.3
Standard (Ohio)	15.4	16.1
Sun	7.1	9.4
Union	11.1	12.8
Average	11.3	11.7
International:		
Exxon	11.6	10.7
Gulf	12.3	8.9
Mobil	13.3	15.3
Standard (California)	11.4	10.2
Texaco	13.7	9.7
Average	12.5	11.0
Canadian:		
Gulf Oil of Canada		11.1
Imperial Oil	12.4	17.2
Pacific Petroleum		12.3
Average	12.4	13.5

Producers	1953–72	1960–72
Domestic:		
Aztec		8.9
Baruch-Foster		.9
Consolidated		4.9
Crestmont		−4.8
Crystal		4.8
Felmont		8.7
General American	8.9	11.5
Louisiana Land		13.7
Superior	9.0	8.9
Westates		5.5
Average	9.0	6.3
Canadian:		
Canadian Export		6.4
Canadian Homestead		24.9
Canadian Superior		14.3
Dome	21.4	32.0
Home		15.8
United Canso		20.3
Average	21.4	19.0
Overseas:		
Asamera		37.5
Belco		4.7
Creole		5.2
Occidental		23.8
Average		17.8
Standard & Poor's 500 Stock Composite Index	15.6	12.8

[1] Annual rate of return that would yield same increase in value over the period as realized price appreciation with dividends reinvested. Figures shown are averages of 3 rates of return based on 3 alternative price assumptions: (1) Stock purchased at initial year's high, sold at final year's high, with all dividends reinvested at succeeding year's high, (2) stock purchased at initial year's low, sold at final year's low, with dividends reinvested at succeeding year's low, and (3) stock purchased at initial year's closing price, sold at final year's closing price, with dividends reinvested at succeeding year's closing price.

Source: Edward J. Mitchell, "U.S. Energy Policy: A Primer" (Washington: American Enterprise Institute, 1974), table B-1.

In an attempt to circumvent the problems of interpeting accounting profit data, Mitchell calculated the profits that would have been realized by owners of oil company common stocks. Specifically, he calculated oil company's stockholders' profits over a specified period by subtracting the sum of the common stock's purchase price at the start of the period and all dividends (assumed to be reinvested in the company's common stocks) paid during the period from

[27] Edward Mitchell, *U.S. Energy Policy: A Primer* (Washington: American Enterprise Institute, 1974), p. 91.

the value of the initial and acquired stock at the period's close.[28] Table 14 reprints Mitchell's calculations of the average annual rates of return realized by oil company stockholders over two periods, 1953–72 and 1960–72. Based on this data Mitchell concludes:

"1. American petroleum companies were significantly less profitable than the S & P (Standard and Poor's) 500 over the 1953 to 1972 period. Indeed, not one of the twenty-one American petroleum companies equalled the S & P 500's rate of return!"

"2. The eight companies charged by the Federal Trade Commission with monopolizing the industry earned an average rate of return of 12.1 percent, more than 20 percent below the S & P norm for the 1953 to 1972 period."

"3. From 1960 to 1972 domestic producers realized less than half the rate of return of the S & P 500."[29]

The rather poor profit performances realized by these major oil companies is inconsistent with the charge that they have been exercising substantial monopoly power.

Profitability of Offshore Oil Investments.—Because of the relatively much higher costs of lease acquisition and production, fewer firms are actively involved in producing offshore oil. Moreover, offshore oil is frequently produced by joint ventures of several oil companies. For these reasons, monopoly returns seem especially likely to be realized in this sub-business. Nevertheless, a rather large number of economic studies have failed to find any evidence of monopoly.[30] For example, a U.S. Bureau of Mines study concluded that the typical successful offshore tract in tne Gulf of Mexico yielded a return on total assets of between 14 and 17 percent—many tracts are unsuccessful.[31] After examining the process of leasing offshore lands, Professors Erickson and Spann concluded that "oil and gas companies earn no more than a competitive rate of return on offshore drilling."[32]

THE EVIDENCE: SPECIAL MONOPOLY ARGUMENTS

When judged by the conventional market structure, industry conduct, and industry performance criteria, the conclusion that the American oil industry is relatively competitive is unavoidable. Hence, proponents of the thesis that the American oil industry is monopolized have had to develop a special monopoly argument.[33] As outlined by the Federal Trade Commission: "the major oil companies in general and the eight largest majors in particular have engaged in conduct * * * squeez[ing] independents at both the refining and marketing levels." [34] This ability to squeeze "has its origin in the structural peculiarities of the petroleum industry" which allow the majors to "limit effectively the supply of crude oil to a point which reduces refinery profits to zero. Clearly, such a system creates a hazardous existence for independent refiners who have little or no crude production." [35]

Squeezing could be both profitable and successful only if the integrated majors enjoyed special advantages over their independent competitors. The Federal Trade Commission mistakenly argued that they enjoyed two import quotas—

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[28] Mitchell comments: "One criticism of this approach is that initial period stock prices may already capitalize expected future monopoly profits. Therefore, rates of return calculated on initial stock prices would only reflect normal rates of return, even though monopoly profits were being earned * * * As a practical matter this probably has little effect on our calculated rates of return. Any monopoly profits earned in the petroleum industry would * * * require lax antitrust and regulatory policy and a passive Congress and executive. The uncertainty of future public policy would mean that these monopoly profits would be discounted at a very high rate and that monopoly profits that might accrue four or five years in the future would be accorded a very small value in present stock prices * * * Monopoly profits earned continuously for a couple of decades should definitely show up in our figures." E. Mitchell, *U.S. Energy Policy: A Primer*, pp. 92–93.

[29] E. Mitchell, *U.S. Energy Policy: A Primer*, pp. 93–95.

[30] See Jesse Markham, "The Competitive Effects of Joint Bidding by Oil Companies for Offshore Lease Sales," in Jesse Markham and Gustov Papanek, eds., *Industrial Organization and Economic Development* (Boston: Houghton Mifflin, 1970) pp. 116–35. Edward Erickson and Robert Spann, "The U.S. Petroleum Industry" in E. Erickson and L. Waverman, *The Energy Question*, Vol. 2, and C. J. Jirik, *Composition of the Offshore U.S. Petroleum Industry and Estimated Cost of Producing Petroleum in the Gulf of Mexico*, U.S.D.I. Information Circular 8557 (Washington: G.P.O., 1972).

[31] L. K. Weaver, *et al.*, *Composition of Offshore U.S. Petroleum Industry*.

[32] E. Erickson and R. Spann, "The U.S. Petroleum Industry," p. 17.

[33] This argument is by no means original with the FTC. It was developed initially by de Chazeau and Kahn. Recent adherents include the Federal Trade Commission. See Melvin de Chazeau and Alfred Kahn, *Integration and Competition in the Petroleum Industry* (New Haven: Yale University Press, 1959), pp. 221–29.

[34] U.S. Federal Trade Commission, "Preliminary Staff Report," p. 43.

[35] *Ibid.*, pp. 17, 43.

which were abolished in 1973—and the oil depletion allowance—abolished for large oil companies in 1975:[36]

"1. The import quota clearly contributed to profits earned in producing crude oil by elevating prices, but the quota increased profits to the major in another way. The right to import went only to existing refineries. Thus the major companies * * * were able to purchase oil at the world price as an input for their refineries, which produced final products at elevated domestic prices."[37]

"2. Oil depletion allowances [allowed] * * * a crude oil producing firm * * * to subtract from its gross income before taxes an amount equal to 22 percent of its total revenues from crude production * * * Under this system the major integrated firms have an incentive to seek high crude prices. The high crude prices are, however, a cost to the major firms' refineries. Thus, an increase in crude prices implies an increase in crude profits but a decrease in refinery profits. The integrated oil companies gain because the depletion allowance reduces the tax on crude profits, while refinery profits are not subject to the same advantageous depletion allowance."[38]

The arguments just summarized are fallacious.

TABLE 15.—PER BARREL SUBSIDIES AWARDED TO 3 OIL REFINERS IN 1969[1]

Firm	Daily total crude oil input[2] (barrels)	Daily total crude oil imports allowed by sliding scale (barrels)	Gross value of daily import rights[3]	Per barrel subsidy to refinery[4] (cents)
	1	2	3	4
Standard Oil of New Jersey	992,000	35,810	$53,715	5.41
Clark Oil	97,651	8,886	13,329	13.65
Husky Oil	11,000	2,060	3,090	28.09

[1] These calculations are intended to be illustrative only. They are premised on 2 simplifying assumptions: (1) The refineries of all 3 firms are located in Districts I–IV. (2) None of these firms was claiming historical import rights.
[2] Estimates of daily crude oil inputs are obtained from Moody's. These are approximations.
[3] The right to import 1 barrel of oil into Districts I–IV was worth about $1.50 in 1969 (see "The Oil Import Question"). Thus the product of $1.50 times the daily crude oil imports allowed yields the gross value of import rights.
[4] Obtained by dividing col. 3 by col. 1.

Source: Richard Mancke, "The Failure of U.S. Energy Policy" (New York: Columbia University Press, 1974), table 7–4.

Under the Mandatory Oil Import Quota Program the general rule for allocating the valuable oil import rights was that they be given to domestic refiners as a percentage of their total crude oil imports. However, the allocation formula was a sliding scale that granted small refiners a far larger proportion of imports. Table 15 calculates the value in 1969 of the per barrel subsidy which the sliding scale would have awarded three refiners of very different size. The small refiner received a per barrel subsidy more than five times higher than the largest. This result was not atypical. But, this means that the FTC was wrong when it stated that the allocation of oil import rights provided the large integrated majors with a tool for squeezing their smaller independent competitors.

The FTC's second charge was that, because the oil depletion allowance reduced the effective tax rate on crude oil profits, the large integrated majors have incentives to raise the price of crude oil and thereby diverted taxable profits from refining operations to crude oil operations. As a result, the FTC continued, independent refiners would be squeezed. Although sounding plausible, this charge was flawed since, using the FTC's own data, 16 of the 17 largest integrated majors would have found profit-shifting unprofitable.

The FTC's analysis was wrong because it failed to take proper account of the fact that most of the integrated majors were not self sufficient in crude oil. To operate their U.S. refineries at desired levels they had to buy crude oil from independent producers. Assuming that the oil depletion allowance was 22 percent,

[36] Based on arguments similar to those outlined in the text, the FTC has issued a complaint charging the eight largest American oil companies with antitrust violations. In an unprecedented move, the FTC judge hearing the case issued a brief (October, 1975), arguing that, because of changed circumstances since the charge was brought (especially OPEC's success at raising world oil prices and the abolition of both oil import quotas and the oil depletion allowance), the charge should be withdrawn. The full Commission ruled against this suggestion. I suspect that political considerations rather than economic analysis lay behind the Commission's ruling.
[37] *Ibid.*, p. 15.
[38] *Ibid.*, p. 17.

profit-shifting would only yield profits for those companies able to produce at least 93 percent of their crude oil needs.[39] Table 16 reproduces the FTC's estimates of crude oil self sufficiency for the 17 largest integrated American refiners in 1969. Except for Getty Oil, only the sixteenth largest, none of these integrated giants produced more than 93 percent of its total domestic needs. Hence, none owned enough crude oil self for profit-shifting to be profitable. The after-tax losses assuming any of these firms had adopted this strategy would have ranged from a low of 3 cents on each dollar of profits shifted by relatively oil-rich Marathon to a high of 48.3 cents on each dollar of profits shifted by relatively oil-poor Standard Oil of Ohio.[40] None of these 16 integrated majors would choose to bear these high costs. This implies that, even if it were possible, profit-shifting would never be practiced and thus that independent refiners would never be "squeezed."

TABLE 16.—FTC'S ESTIMATES OF THE DOMESTIC SELF-SUFFICIENCY OF 17 LEADING REFINERS IN 1969*

[Percent of runs to stills]

Company	Self-sufficiency
Standard (New Jersey)	87.5
Standard (Indiana)	[1] 50.0
Texaco	[2] 80.4
Shell	62.1
Standard (California)	[1] 68.8
Mobil	[3] 42.2
Gulf	[1 4] 87.6
ARCO	64.9
Sun	[5] 46.7
Union	[1] 64.3
Standard (Ohio)	[1] 6.7
Phillips	[1] 51.8
Ashland [6]	12.6
Continental	64.0
Cities Service	49.9
Getty [7]	[4] 137.2
Marathon	88.1

[1] Other liquids included in crude production.
[2] Estimated.
[3] Other liquids included in refinery runs.
[4] Excludes crude processed for company's account.
[5] Crude production includes Canada.
[6] 12 mo to Sept. 30, 1969.
[7] Includes subsidiaries.

*Source: "Preliminary Federal Trade Commission Staff Report on Its Investigation of the Petroleum Industry" (July 1973), p. 20.

THE EVIDENCE: A CONCLUDING COMMENT

Five significant factual conclusions were established in the preceding discussions:

1. Many firms (both large and small) participate in each stage of the oil business and entry appears to be relatively easy.
2. Many firms (both large and small) produce natural gas and/or coal and entry is relatively easy.
3. There is no evidence that oil companies are presently engaged in wide ranging collusive practices.
4. The large oil companies have not enjoyed abnormally high profits that have persisted over a long period of time.
5. The special "squeezing" arguments are implausible because adoption of the hypothesized tactics would have cost the large oil companies (i.e., the alleged squeezers) billions of dollars annually to implement.

To summarize, after examining a great variety of empirical evidence this paper concludes that the oil companies no longer possess observable monopoly power in any important energy market. Moreover, the economic structures of the key stages of the oil business are such that the successful exercise of monopoly power is virtually impossible unless the oil companies receive direct governmental assistance. Though these conclusions may surprise the lay reader and certainly are inconsistent with present popular perceptions, they will be neither surprising nor new to most academic economists who have more than a passing acquaintance

[39] The proof can be found in Richard Mancke, *The Failure of U.S. Energy Policy*, Footnote 33 to chapter 7.
[40] *Ibid.*, Footnote 36 to chapter 7.

with both the oil industry and the field of industrial organization. These "experts" are nearly unanimous in agreeing that the oil companies possess little or no independent monopoly power. Before concluding with a discussion of the high costs because a large portion of energy policymakers' efforts are aimed at remedying a nonexistent oil company monopoly problem, it should prove helpful to discuss four factors which might explain the sharply different assessments of the public and of the, presumably unbiased, academic experts.

First, economic theory suggests that relative size, not absolute size, is an important determinant of whether the firms in an industry are likely to possess monopoly power. Review of U.S. antitrust case law reveals that the courts have also stressed the importance of relative (to the market) firm size while downplaying the role of absolute firm size. Nevertheless, precisely because the actions of large firms are so visible, the American public has always equated absolute size with monopoly power. The major oil companies are among the very largest and most visible companies doing business in the United States. Huge accounting profits (but not high profit rates) are an inevitable corollary of large absolute firm size. This makes these companies obvious targets for public criticism.

Second, nearly 80 percent of all domestically produced crude oil comes from just four states—Texas, Louisiana, California, and Oklahoma. Just two states—Louisiana and Texas—presently produce nearly 75 percent of all domestic natural gas. Because of their close proximity to the petroleum sources, citizens of these states pay lower petroleum costs; they also pay significantly lower state taxes because the oil companies pay large rents to the oil states.[41] Because citizens from other regions—especially the Northeast—pay higher petroleum prices and receive none of the rents, they are often angry. The large oil companies are obvious, though inappropriate, targets for this anger. The fact that some "Texans" have earned huge fortunes in the oil business also offends popular sensibilities. Anyone who has seen the cliche depiction of oil barons in recent movies such as *Oklahoma Crude* or *The Drowning Pool* or in a film classic like *Spindle Top*, cannot doubt that many Americans believe that oil men are innately evil.

Third, in the not too distant past two government policies—state-enforced market demand prorationing and federally-enforced oil import quotas—did allow the producers of American oil to charge above competitive prices. Specifically, beginning in the early 1930s most of the large oil-producing states began to enforce so-called market demand prorationing regulations which limited, often severely, the maximum rate of crude oil production from each well.[42] State prorationing laws were passed in order to remedy the economic distress due to the sharp Depression-caused drop in crude oil demands and a concurrent sharp rise in crude oil supplies (because of the "fortuitious" discovery of the giant East Texas oil field) which has caused oil prices to tumble. Prorationing did reverse the price fall. Moreover, because there were only a few important oil-producing states and these (assisted by the Federal government's enforcement of the Connally Hot Oil Act) were able to coordinate their respective prorationing policies, these regulations offered a tool by which monopolistic crude oil prices were maintained long after the Depression.[43]

Prior to the late 1940s the United States was self-sufficient in crude oil; the Gulf-coast states actually exported large quantities to Western Europe. But toward the end of the decade their share of the West-European market was quickly eroded by expanding sales from lower-cost Persian Gulf sources. By 1950, Persian Gulf oil was supplying most of Western Europe's petroleum needs. Having nearly total control of this market, some Persian Gulf Producers began exporting to the United States. This had the effect of undermining the oil states' ability to use prorationing to fix a high price for U.S. crude. Specifically, in the fact of swelling-imports, American crude oil's high price could be maintained only if the oil states continually tightened their prorationing policies. But, even if this succeeded, domestic producers knew that their profits would decline with a fall in the domestic share of the oil market. Thus, the U.S. oil industry sought to end the erosion of their product's market share by persuading the government to restrict oil imports severely. The industry's pleas were rewarded when President Eisenhower issued an

[41] For a discussion of the nature of petroleum rents see Richard B. Mancke, *The Failure of U.S. Energy Policy*, chapter 4.

[42] Actually the prorationing laws exempted low-productivity stripper wells. This exemption made only a minor difference.

[43] For elaboration see R. Mancke, *The Failure of U.S. Energy Policy*, pp. 72–76.

Executive Order establishing mandatory oil import quotas in 1959.[44] A prestigious Presidential Cabinet Level Task Force issued a report in 1970 which maintained that American consumers were spending roughly $5 billion per year more for oil as a result of the enforcement oil import quotas.[45]

Prorationing and (somewhat later) oil import quotas did result in above competitive crude oil prices throughout the 1950s and 1960s. I was one of their harshest critics at that time.[46] However, the situation changed dramatically in the early 1970s becuase the United States' oil supplies were no longer sufficient to meet most domestic demands and the price of foreign oil began its seemingly inexorable sharp rise. Prorationing has had almost no restrictive effects on output since 1972 and oil import quotas were abolished by a Presidential Executive Order in May 1973. In sum, the domestic oil industry no longer benefits from my government-sponsored monopolistic restrictions. Those who continue to blast the industry for enjoying the fruits from such restrictions are either ignorant or deliberately deceitful.

Fourth, as a direct result of the OAPEC embargo, the United States has suffered enormously higher energy costs, a sharp deterioration of its oil security, and world-wide political humiliation. The American public has quite naturally sought a villain upon which blame for our present energy problems can be placed. The large oil companies offer an inviting target. The fact that there is no evidence that these companies presently possess any monopoly power is of little importance to the oil companies' demagogic accusers. Professor M.A. Adelman alluded to this problem when he told a Senate Committee in January 1975:

> Sheik Yamani and his colleagues knew that the oil companies are in the public doghouse, and that millions of people will call a price hike a reduction if you can only make the companies out as villains. The public attitude toward the multinational oil companies brings me back to the bad old days of Joe McCarthy. Then, many of our people, frustrated, angry, and a bit fearful of the unreachable leaders of the "monolithic Communist bloc," went out determined to find and bash an enemy at home. Today, unable to do anything about high oil prices, many of our citizens are inclined to take it out on the multinational oil companies.[47]

CONCLUSION

There is no evidence that the large vertically integrated oil companies are presently exercising monopoly power in any of the four major stages of the oil business: the production of crude oil, the transportation of crude oil and refined products, the refining of crude oil, and the marketing of refined oil products. Indeed, all available evidence supports the opposite inference. Hence, there is neither economic nor legal justification for forcing the integrated oil companies to divest one or more of their major operations. Nevertheless, this has not stopped numerous Congressmen—including several prominent Presidential aspirants—from backing legislation designed to force oil company divestiture on the grounds that this will help to alleviate our present energy problems by eliminating their alleged major cause—the oil companies' monopoly power. Absent Congressional naivety, the real aim of this intellectually dishonest legislation seems dubious: it is politically popular to attack the "monopolistic" oil companies. There are at least three reasons for opposing political pandering of this kind.

The first objection is a practical one. If adopted, divestiture is likely to result in higher (rather than lower) fuel prices since oil companies will have higher costs because divestiture eliminates some real integration economies. (Other papers in this volume discuss integration economies in considerable detail.) Moreover, merely raising the threat of divestiture discourages oil companies from making investments of the magnitude necessary if the United States is to reduce its oil import dependence.

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[44] The publicly proclaimed rationale for these quotas was that they were necessary to prevent rising dependence on "insecure" foreign oil and thus protect vital security interests. Throughout the 1960's most most academic economists felt that the real reason for oil import quotas was to prevent lower oil prices.

[45] U.S. Cabinet Task Force on Oil Import Controls, *The Oil Import Question* (Washington: U.S. Government Printing Office, 1970), p. 22.

[46] As a staff economist for the President's Cabinet Task Force on Oil Import Controls and in several articles including "The Longer Supply Curve of Crude Oil Produced in the United States," *Antitrust Bulletin* XV (1970) and "The Cost of Oil Import Controls" in *Oil Prices and Phase II*, Hearings before the Subcommittee on Priorities and Economy in Government of the Joint Economic Committee, 92nd Congress, First Session (Washington: G.P.O., 1972), pp. 56–61.

[47] M. A. Adelman, *Statement to the Senate Foreign Relations Committee, Subcommittee on Multinational Corporations* (January 29, 1975).

Second, the United States presently faces several very real energy policy questions requiring serious and sustained public attention: How can we reduce our still-growing dependence on insecure and expensive oil imports? How can we reduce the environmental and health risks attributable to the necessarily higher production and consumption of domestic fuels like coal, oil shale, and nuclear power? And, how can the United States guarantee American consumers that they will have access to adequate energy supplies without paying unnecessarily high prices? Finding answers to these questions is of vital importance to all Americans. Both Congress and the President ought to be examining and, at some point, legislating and adopting policies designed to achieve such valuable goals as reducing the monopoly power presently exercised by the OPEC countries, reducing U.S. petroleum demands, and increasing U.S. petroleum supplies.[48] Congress has been especially remiss about tackling this task. Instead, many members have found that it is far easier to rant and rave about the non-existent oil company monopoly problem. Thus, as of year end 1975, more than two years since the start of the OAPEC oil embargo, the U.S. Congress had avoided passing a single measure that held promise of substantially alleviating any of our energy problems. Americans can only hope that the Congressional practice of benign neglect of our real energy problems does not prove fatal.

The third objection to the oil company divestiture legislation is that, though it will have a short run political payoff, in the long run it will make no contribution to solving our real energy problems and thus the public will eventually realize that it has once again been duped and, as a result, there will be further deterioration in public trust in our political institutions. Obviously, this objection is not restricted to politically attractive attempts to force oil company divestiture—it also applies to the many simplistic and intellectually indefensible decisions that ultimately culminated in the debilitating disasters of Vietnam and Watergate and in the well-intentioned but too ambitious social legislation that was passed under the rubric of the Great Society. Today most politicians proudly claim to be statesmen-practitioners of a new, more realistic, and much more honest politics. Their advocacy of intellectually dishonest, but politically popular, legislation aimed at punishing oil companies raises serious doubts as to the truth of their claims.

Senator HRUSKA. Mr. Bangert, do you have any questions?

Mr. BANGERT. No, thank you, Mr. Chairman.

Senator HRUSKA. Professor, the preceding witness, Professor Mitchell, when he was asked about some of the practical aspects of achieving and bringing about divestiture, said frankly, he had not given it much thought, because he could never take this kind of an effort to have divestiture enforced very seriously. How do you feel about these seven bills that we have here, each of which is advocated most fervently by some of the finest Senators in the Senate today?

Professor MANCKE. Well, I must confess that I, too, have not given any attention to the practical problems of implementing divestiture. I must also confess that I am worried about these bills, extremely worried, because I think they will lead to severe practical problems—practical problems that I, as an economist, know little about. And I have a feeling that maybe accountants and lawyers would be more qualified to comment on these practical issues.

But I think I should also emphasize the point that I tried to make in my testimony. One severe economic cost of divestiture legislation is the type of effect it is likely to have on investment. I find it hard to believe that if you create extra risks in this business by threatening divestiture, that it is not going to cause companies to have less investment than they otherwise would. And I think at this point in time, it is very useful to have oil companies investing as much as they can.

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[48] For elaboration see Richard Mancke, *Squeaking By: U.S. Energy Policy Since the Embargo* (New York: Columbia University Press, 1976).

Senator HRUSKA. Only recently, in terms of days, the Congress enacted, and the President signed an energy bill, among the provisions of which the price of domestic oil was rolled back. Is that good or is it bad?

Professor MANCKE. I think I would concur with the Wall Street Journal editorial, after the bill was signed. I think it was extremely bad, and I consider it to have been one of the worst pieces of energy legislation that we have had, probably, I would say, the worst piece.

We have gone through 2 years—actually, more than 2 years of price controls—a lot more than 2 years of price controls in the oil industry, and we have created an administrative nightmare. If one wants to stimulate domestic oil supply and if one wants to end the kind of allocation nightmares that, in my opinion, provide almost the sole rationale for having a Federal Energy Administration today, the best way out of that would be not to have price controls.

And as long as I am talking about price controls, I should also mention, as economists are wont to on this point, we have the example of natural gas wellhead price regulation, which most academic economists, who are also students of the natural gas industry and experts in the field of industrial organization, think has been a disaster.

Senator HRUSKA. You overlook one factor, however. It enables a far greater majority of 535 Members of the Congress to go back to their constituents and say, "We rolled back the price of oil for your benefit, dear constituent. You should clap hands every time I make an appearance before you." Is that, on the short range—or long range—good or bad?

Professor MANCKE. Well, as I think I indicated in my testimony, I think that is very bad, and I personnally get very upset by that kind of congressional response.

Senator HRUSKA. Well, thank you for your appearance here, and for your contribution to the record.

Professor MANCKE. Thank you very much, sir.

Senator HRUSKA. Before we recess, the Chair would like to announce that Senator Thurmond had certain questions he wanted to propound to Mr. Mancke, which he will submit.

The committee will meet next on Tuesday, January 27, at 9:30 a.m., in this same room to hear Mr. Raymond Gary and Mr. Peter Bator. We stand in recess.

[Whereupon, the hearing was recessed at 10:46 a.m., to be reconvened at 9:30 a.m., on January 27.]

VERTICAL INTEGRATION IN THE PETROLEUM INDUSTRY

TUESDAY, JANUARY 27, 1976

U.S. Senate,
Subcommittee on Antitrust and Monopoly
of the Committee of the Judiciary,
Washington, D.C.

The subcommittee met at 9:30 a.m., in room 2228 Dirksen Senate Office Building, Hon. Roman L. Hruska presiding.

Staff present: Charles E. Bangert, general counsel; Walter S. Measday, chief economist; Patricia Y. Bario, professional staff member; William E. Kovacic, staff member; Catherine M. McCarthy, chief clerk; Peter N. Chumbris, minority chief counsel; Emory Sneedon, minority assistant counsel; Garrett Vaughn, minority economist.

Senator Hruska. The subcommittee will come to order.

The chairman is engaged elsewhere in other Senate official business and has asked me to preside.

We have as witnesses this morning Mr. Bator and Mr. Gary.

Now, this is in connection with the continued hearings on the bills for divestiture of the petroleum industry and with particular reference to S. 2387. It is the continuance of a series of hearings which will continue throughout most of this month, having been in progress for some weeks in the past.

Mr. Bator, we will call upon you for your testimony. Now, you have submitted a statement which is quite comprehensive. It formed a part of the temporary chairman's Sunday reading. I might have broken the Sabbath by reading it, but I did not break any records by doing so. That is very interesting reading.

It is hoped, however, that you will summarize your statement out of deference to the element of time. Are you prepared to do so?

Mr. Bator. Yes, sir.

Senator Hruska. Fine, let me assure you the complete text of your prepared statement will appear at the conclusion of your oral statement in the permanent hearing record. And the same thing will be true of you, Mr. Gary.

Mr. Gary. Thank you.

Senator Hruska. You may proceed, Mr. Bator.

STATEMENT OF PETER BATOR, DAVIS POLK & WARDWELL, NEW YORK, N.Y.

Mr. Bator. Mr. Chairman, I want to thank the subcommittee for the opportunity granted me to testify today regarding the legal consequences of S. 2387, and similar bills, mandating divestiture by certain vertically integrated oil companies.

My name is Peter Bator and I am a partner in the New York City law firm of Davis Polk & Wardwell. Information as to my firm is contained in my prepared testimony.

The purpose of my testimony today is not to discuss the widsom of these bills, but to try to give the subcommittee a lawyer's judgment of some of the legal difficulties and problems which would arise if a bill such as S. 2387 were adopted.

I believe such an analysis would be useful in light of what has been an explicit and important justification given by the proponents of the legislation, that is, that divestiture legislation could solve in a quick, relatively easy and unbureaucratic manner the problems which are perceived by some to exist in the oil industry.

It is easy to say, "Divest yourself of some assets." It is also eays to assume that such divestiture can be effected speedily and without complications. The facts are otherwise.

My testimony will try to outline briefly the complicated problems that would have to be faced in connection with a divestiture program.

My conclusion is that if Congress determines that a divestiture program should be mandated, it would require an extensive revision of existing contractural arrangements underlying the financial and operational structure of the industry.

This restructuring would also result in a massive amount of litigation. The whole process would require 10 or more years of lengthy, arduous, and expensive effort by Federal administrative agencies, by the judiciary, and the private sector, not the least, lawyers.

I believe Congress should recognize these factors or run the risk of performing surgery of a radical and irreversible nature on the basis of erroneous premises.

Despite the discussion of the bill in Congress and in the press, I do not believe that there has yet been published an analysis of where the strictures of S. 2387 would fall. The subcommittee recognizes, I am sure, that all pipeline assets, domestic and foreign, are potentially affected, which means that this bill covers approximately $9 billion in domestic pipeline assets, alone owned by some 200 oil companies.

The companies covered by the provisions of the bill relating to major refiners, marketers, and producers are included in the chart prepared by Morgan Stanley, which is attached to my testimony and is, I think, attached to Mr. Gary's.

Twenty oil companies appear to fall within the definition of a "major," based on their reported 1974 production, marketing, and refining. And you can see the magnitude of the assets and economic interests involved.

The total assets of the 20 companies amount to more than $146 billion; their long-term debt is more than $21 billion. There are hundreds of thousands of people who own the shares and debt securities of these companies directly, and millions more, indirectly, if you count ownership through pension funds, mutual funds, et cetera.

The aggregate market value of the common stock equity of these companies amounts to more than $77 billion.

If S. 2387 becomes law, it will trigger, by far, the largest series of divestitures in history.

In light of the size of the transactions, the scope of the interests affected, and the potential effects on U.S. energy policy, Congress,

I believe, is under an obligation to examine most carefully the validity of the major premises that underlie the legislation and to move cautiously if some or all of such premises are subject to serious challenge.

The premise which I propose to challenge is the one that holds that a legislative divestiture program of this kind can be accomplished quickly, easily, inexpensively, and unbureaucratically.

In an effort to determine the impact of S. 2387 upon the oil companies, we have reviewed numerous agreements and other documents relating to a number of these companies. The documentation we reviewed relates primarily to agreements covering the public and private indebtedness of these companies, concession agreements with foreign governments, and joint venture agreements with foreign governments and other private parties.

Let me mention briefly some of the major effects of the bill upon these documents. The documents under which oil companies have indebtedness outstanding—we will call them "financing documents" for short—contain provisions prohibiting certain actions by the oil companies which were determined by the respective lenders to be necessary to safeguard their interests.

There are a number of types of these provisions commonly found in these financing documents, which, depending on the manner of divestiture, may be expected to be violated by a divestiture program.

These include provisions prohibiting the sale or other disposition of certain assets or the stock of subsidiaries, notably pipeline subsidiaries, provisions restricting the amount of dividends, which may be paid to shareholders, provisions requiring the maintenance of certain ratios of assets to liabilities and similar financial tests, and provisions prohibiting the assignment of rights and obligations under these contracts.

Violation of the types of covenants referred to above results in default under the respective financing documents and permits the acceleration of all indebtedness issued thereunder.

Consequently, divestiture of these prohibited assets would result in a very substantial portion of outstanding oil company indebtedness becoming subject to acceleration pursuant to the terms of the financing documents.

Should S. 2387 become law, we presume that the FTC would not permit this massive acceleration of oil company debt, assuming for this purpose that the FTC would have the power to prevent it, on which point, of course, the bill is silent.

We presume that the FTC would instead require that the creditors of these oil companies become debtholders of some or all of the newly formed entities resulting from divestiture. By the same token, however, it would not appear to be fair and equitable for the FTC to do this and to require existing creditors to accept this new indebtedness without the benefit of any contractual safeguards.

As a result, the FTC will be required to determine what contractual provisions should be binding upon these new entities in order adequately to protect the interests of the creditors.

In addition to causing violations of provisions of many of these financing documents, the bill also outlaws certain important contractual relationships. For example, the bill makes it unlawful for an oil company, which is a major producer, refiner, or marketer, to own or control any transportation asset.

The definition of "control" extends to any substantial or long-term contractual relationship. As a result, the bill would prohibit the continued existence of various contracts between oil companies and their pipeline subsidiaries which constitute the security for outstanding indebtedness of these pipeline companies.

The bill would also render unlawful the performance of certain existing contracts, including particularly, concession and joint venture agreements, which require some combination of producing, refining, marketing, or transportation activities.

For example, where the terms of an agreement require that an oil company both produce and market petroleum products, then the oil company will have to own and control both production and marketing assets in order to perform the contract which, of course, in turn would violate the bill.

The FTC might determine that such an agreement should be divided into two contracts to be performed by the newly constituted production and marketing entities.

But serious questions are presented as to whether and under what circumstances an affected independent third party may be required to enter into separate agreements with the newly constituted entities in substitution for a single agreement with one party which was originally bargained for.

There are a whole series of other factors which will have to be considered in connection with divestiture which I have described in some detail in my prepared testimony and I shall not cover here.

But the thrust of what I am saying is that a divestiture program, such as that mandated by S. 2387, could not possibly be accommodated within existing contractual arrangements. In other words, divestiture would result in massive forced breaches of contract.

And, therefore, such contractual arrangements would have to be rewritten by the divestiture plans. In particular, unless the divestiture plans restructure the financing documents of the affected oil companies, divestiture would result in the right of creditors to accelerate and make immediately due and payable a very substantial portion of the outstanding indebtedness of the affected oil companies, and we are talking about $20, $25 billion.

Thus, the bill will require the FTC to become embroiled in nearly all aspects of the contractual relationships existing between oil companies and their stockholders, their creditors, and their employees, and other parties.

The FTC will have to accommodate these relationships and, as a result, the FTC will be required to review, modify, and approve plans submitted by oil companies which, among other things, allocate assets and liabilities of existing oil companies among the newly constituted entities and decide how much debt each one is to bear; restructure the rights of persons holding the stock and indebtedness of these oil companies; determine the financial convenants and restrictions which will be imposed on the newly constituted entities to protect fairly the rights of the creditors; revise commercial and other contracts whose provisions no longer make sense under the changed circumstances resulting from divestiture; revise existing union and other labor agreements, and cover a whole host of other matters: Employment contracts; pension and profit-sharing plans; leases; insurance

policies; allocation of tax liabilities; allocation of contingent liabilities, et cetera.

The complexity of these issues must not be underestimated.

A further and special group of problems will undoubtedly be raised by the requirements of S. 2387 that non-United States or foreign assets of the prohibited sort will have to be disposed of, and that substantial or long-term contractual arrangements relating to foreign prohibited assets will have to be terminated.

It cannot be doubted that foreign third parties which have contractual relationships with the oil companies, including foreign holders of oil company indebtedness containing covenants of the kind I have described, will seek to enforce their contractual rights in appropriate foreign forums.

It can also be expected that foreign courts will support the claims of such third-party foreigners, particularly foreign governments, that their contractual rights cannot be abrogated by unilateral U.S. action.

The result will be, in addition to the termination of valuable foreign contractual rights, acceleration of oil company debt held by foreigners, and claims by foreigners for substantial damages. These claims are likely to be upheld in foreign courts and enforced against oil companies' foreign assets.

All of these difficulties will have to be resolved by the plans which the FTC has the responsibility of approving under the bill. Moreover, it can be expected that all classes of persons affected by the plans will intervene and participate vigorously in the proceedings before the FTC.

Given the number of companies which the bill covers, the fact that they will all have to divest at the same time, the difficulty of the issues presented, the large number and variety of persons affected by the bill, and the magnitude of the interests involved, I cannot reasonably believe that the FTC will be able to perform the role contemplated for it without the creation of a new and sizable bureaucratic apparatus.

It can also be expected that affected persons will challenge substantially all of the plans submitted to the FTC before the Commission itself and, in addition, will seek judicial review of the FTC decisions before the courts of appeals and the Supreme Court.

Indeed, all of this indicates and virtually insures that implementation of S. 2387 will give rise to a decade or more of restructuring and litigation during which substantial uncertainty will exist as to the nature and extent of a broad range of existing contractual arrangements and legal obligations within the industry.

I believe the precedent, and there is very little precedent for this kind of structural divestiture program, bears out my point. The Public Utility Holding Company Act involved an industry far smaller and, in terms of divestiture, far simpler than what you would face here.

The bill was adopted in 1935 and the divestiture plans were still being carried out up to the midfifties. It certainly took a matter of 15 to 20 years to carry out the major restructuring required by that act.

Antitrust divestitures and bankruptcy reorganizations also indicate the likelihood of this kind of delay.

Where does this study lead us? First, it raises doubts as to whether simple sounding legislation of this kind is a legally viable approach to disintegrating one of the largest and most complex industries in the world.

These doubts are heightened by the drafting inadequacies of the bill which I have covered in some detail in my prepared statement. I should add that the bill presents serious constitutional as well as other legal problems, which will inevitably lead to legal challenges to the bill and to its implementation.

The difficulty and scope of planning and implementing the breakup of all the major oil companies in the United States together with the accompanying litigation should also make it abundantly clear that any divestiture statute is not at all the simple, swift, unbureaucratic, or inexpensive way of resolving what is perceived to be wrong with the industry.

In terms of delay, I am not quibbling about 3 years or 5 years. It would take at least 10, and probably as long as 20, years to resolve all of the questions presented from the time of the initial submission of plans to the FTC to the review and challenge of those plans, the court tests, and the final carrying out of the divestiture orders.

Recognition of these considerations should put to rest the suggestion that S. 2387 and legislation like it is needed as a shortcut through the perils of antitrust litigation. No matter what route is selected, the determination of such important questions will take years.

In light of that fact, I believe Congress should recognize what it is giving up in selecting statutorily required divestiture, rather than leaving the question to traditional court review.

A divestiture statute in many ways represents a very sharp departure from historical American antitrust approaches. Congress, I believe, has never before held that size alone, or the vertical integration structure generally, is anticompetitive.

Moreover, it has traditionally approached antitrust legislation on an across-the-board prospective rather than a single industry basis.

Finally, antitrust law enforcement has traditionally been surrounded by procedural safeguards. During the course of antitrust litigation, the court has the benefit of adversary testimony and cross-examination on the premises of anticompetitive effects, as well as expert discussion on the appropriateness of any remedy.

Although opposing views of witnesses have been presented to this subcommittee and there have been colloquies, these issues of effect and appropriateness, as they relate to S. 2387, have never been subjected to the cauldron of a true adversary proceeding.

Finally, I believe Congress should aks itself the question, "What happens to this country's energy industry during this 10 to 20 years of uncertainty and litigation?" As divestiture programs are proposed by the various companies, reviewed and argued before the FTC, litigated in the courts, this enormously complex and vital sector of our economy will be in what really amounts to a state of chaos.

Until plans are finally approved, litigation concluded, and the plans put into effect, literally no one will know who owns what, what kind of companies will emerge, what their capital structures will look like, or how viable and competitive, both domestically and overseas, the fragmented components will be.

Congress should, I believe, carefully consider whether an industry in this state of uncertainty could finance on a private basis the huge projects which any rational national energy policy for this country requires.

Thank you.

[The prepared statement of Mr. Bator follows. Testimony resumes on p. 1940.]

PREPARED STATEMENT OF PETER A. BATOR, DAVIS POLK & WARDWELL

Mr. Chairman, I want to thank the Subcommittee for the opportunity granted me to testify today regarding the legal consequences of Senator Bayh's bill, S. 2387, mandating divestiture by certain vertically integrated oil companies. My name is Peter A. Bator and I am a partner in the New York City law firm of Davis Polk & Wardwell. My firm consists of approximately 180 lawyers and carries on a diversified general practice, although our work is to some degree concentrated in the corporate financial area, together with litigation, antitrust advice and tax work. My own practice has been largely in the area of corporate financial work, including representation of banks, investment banking firms and corporate clients in connection with securities issues, project financings, acquisitions and so forth.

The firm does not generally represent—that is, we do not act as general counsel or principal outside counsel for—any of the major integrated oil companies as defined in S. 2387. We do act as principal outside counsel for some medium sized or smaller oil companies, and we do represent from time to time certain of the major integrated oil companies on specific projects, usually on a specific piece of financing or a specific litigation matter. We also advise one of the major integrated companies on a continuing basis on certain tax matters. In addition, through commercial and investment banking clients, my firm and I individually have had substantial experience in advising on the legal aspects of many financing transactions of the major oil companies.

The research on which this statement is based has been done at the request of the American Petroleum Institute, a trade association which has not heretofore been a client of our firm.

I. INTRODUCTION

The purpose of my testimony today is not to discuss the wisdom of divestiture legislation but to try to give the Subcommittee a lawyer's judgment of how a divestiture program would in fact work, and to analyze some of the legal difficulties and problems which would arise if a bill such as S. 2387 were adopted.

I believe such an analysis is useful for two reasons. In the first place, our review of the testimony given before this Subcommittee and other committees indicates that no one has in fact done such an analysis of just how a divestiture program might operate. Second, I believe such an analysis is useful in light of what has been an explicit and important justification given by the proponents of the legislation—that is, that divestiture legislation could solve in a quick, relatively easy and unbureaucratic manner the many problems which are perceived by some to exist in the oil industry.[1] The inclusion in the bill of a three year time limit for

[1] The following statements are taken from either prepared testimony or transcripts of testimony before the Subcommittee during 1975:

"But it is my conclusion that, given the incredible delay inescapably involved in the disposition on a case by case basis of actions filed under the antitrust law, that we would be better off at least selectively by legislation to specify structures that must be dismantled . . ."; "Without assigning or suggesting an improper motive or indifference to public interest to either of those agencies [the Department of Justice and the Federal Trade Commission], part of the basic problem of any kind of massive judicial procedures seeking antitrust enforcement, the complexity of the cases, the limitation on manpower, consequent limitation in areas that they can in fact move on—all of this has persuaded me that we should seek some legislative, if you will, short cut." (Senator Hart). "As you know, [the current FTC proceeding] has not even reached the hearing stage, and it is likely to drag on into the 1980's. The time and expense to the Nation can be avoided by Congressional action which can insure that competition is restored now." (Senator Packwood). "Well, because of the history of this whole antitrust effort—the lack of it—does it not really mandate that the Congress set out specific statutory requirements for how these industries ought to be structured to avoid anticompetitiveness? In other words, just a statute—such as the one we propose today—saying that if you are in this kind of business, you cannot get into that kind of business or if you are this big, you cannot acquire other companies, to avoid all the years of judicial determination and interpretations and consent decrees and so on that slow down and hamper effective antitrust enforcement?" (Senator Abourezk). "I think it is fairly clear that if we are to have a petroleum industry structured in a form to respond freely and competitively to our needs within a reasonable time, it is up to Congress to take action . . . time is the critical factor" (Mr. Kenneth Cory, Controller, State of California). "[Divestiture legislation] by its directness and simplicity affirms Congress' clear right to legislate policy without having to delegate implementation of that policy to agencies either reluctant or unable to do the job" (Mr. Harry Patrick, Secretary-Treasurer of The United Mine Workers Union).

the completion of divestiture reflects this view. It is easy to say "divest yourself of these or those assets". It is also easy to assume that such a divestiture can be effected speedily and without complications. But the facts are otherwise. My testimony will try to outline the complicated problems that would have to be faced in connection with a divestiture program. My conclusion is that if Congress determines that a divestiture program should be mandated, it will result in a massive amount of litigation and will require 10 or more years of great effort by the Federal administrative agencies, by the Federal judiciary and by the private sector (oil companies, financial institutions and, not the least, lawyers) before divestiture can be accomplished. The process would be a lengthy, arduous and expensive one and would require an extensive revision of existing contractual arrangements underlying the financial and operational structure of the industry. I believe Congress should recognize these factors or run the risk of performing surgery of a most radical nature, and surgery which is irreversible, on the basis of erroneous premises.

In preparation for this appearance, we have reviewed certain documents of an contractual nature from what we believe to be a representative sampling of oil companies affected by the bill, particularly documents relating to the issuance of, and security for, securities issues of these companies. We have also examined the historical pattern of a number of past divestitures, including those occasioned by antitrust litigation and the Public Utility holding Company Act of 1935. We have made an analysis of the proposed oil industry divestiture statute under the general theories that have governed antitrust enforcement in this country. And, of course, we have analyzed the bill introduced by Senator Bayh on September 23 of last year, S. 2387, as well as reviewing the bill introduced by Senator Tunney on December 9, S. 2761, and somewhat comparable amendments offered by Senators Abourezk and Kennedy to the Natural Gas Emergency Act of 1975, which were defeated in October. We also reviewed the testimony before your Subcommittee over the past year on the question of vertical integration.

II. ANALYSIS OF S. 2387

A starting point for analysis should be a review of S. 2387. From the preamble, it is clear that this bill purports to be "antitrust" legislation, designed to foster competition in the petroleum industry, since it contains a finding that current antitrust laws have been inadequate to maintain this competition. The bill then goes on to define four affected categories of oil companies. "Major producers" are defined as those which, alone or together with affiliates, produced within the United States in the calendar year 1974, or in any succeeding calendar year, more than 36,500,000 barrels of crude petroleum or 200 billion cubic feet of natural gas. In like vein, "major refiners" are those which, alone or with their affiliates in any such calendar year, refined within the United States 75,000,000 or more barrels of product, and "major marketers" are those who alone or with their affiliates in any such calendar year distributed 110,000,000 or more barrels of refined product. Lastly, the bill defines "petroleum transporters" as those persons using a pipeline to transport any crude or refined product, without regard to volume. It is interesting to note that the test for "major marketers" appears to be worldwide whereas the test for "major producers" and "major refiners" are domestic only.

The operative section of the bill makes it illegal after a date three years from the date of enactment for any company falling within any of the four categories to own or to control directly, indirectly or through affiliates any assets used in any of the other processes—production, refining, transportation or marketing—without regard to the size of the assets affected or their location (domestic or foreign). For example, if company X is a "major producer" as defined, it must dispose of *all* refinery assets, *all* marketing assets and *all* transportation (basically pipeline) assets. The one exception is that "major marketers" are not forbidden from holding interests in refining assets, so long as the size of those refining assets does not make the "major marketer" into a "major refiner" as well. In addition, the bill provides that after the three year period, no person owning any interest in a producing, marketing or refining asset, of whatever size, will be permitted to transport either crude petroleum or refined products in which it owns an interest through any pipeline which it owns. "Control" is broadly defined to include substantial and long-term contractual arrangements, as well as stock ownership or director interlocks.

In effect, the bill will force divestiture by any company falling within any of the three "major" categories (with the one exception noted) from connection of any kind with the other segments of the oil business both at home and abroad, and will require the complete separation of pipeline assets of whatever size from ownership or substantial contractual connection with the rest of the oil industry.

The bill concludes by giving enforcement authority to the Federal Trade Commission, to which the companies are required to supply, within one year of enactment, plans of divestiture for approval. The Commission's reviewing authority—which includes the power to modify plans submitted by the companies—is based on a "fair and equitable" standard, but no plan is permitted to be approved which would not substantially accomplish the divestitur required by the statute within the three year period. Willful violations of any provision of the statute are made punishable by substantial fines and imprisonment or suspension of the right to transact business in interstate commerce.

Despite the discussion of the bill in Congress and in the press, it appears that there has not yet been published an analysis of where the strictures of S. 2387 would fall. The Subcommittee recognizes, of course, that all pipeline assets, domestic and foreign, are potentially affected, which means this bill covers more than $9 billion in domestic assets alone owned by approximately 200 oil companies. The companies covered by the provisions of the bill relating to major producers, refiners and marketers are included in the attached chart prepared by Morgan Stanley & Co. Incorporated from public sources. Twenty oil companies appear to fall within the definition of a "major," based on their reported production, refining or marketing volume for 1974. As you can see from the chart, a good many of them are majors in more than one area, and there are no "major marketers" which are not also "major refiners," which means that the exception provided by S. 2387 is meaningless, at least as far as it affects the industry in its current form.

EXHIBIT I

CERTAIN STATISTICS FOR COMPANIES APPARENTLY AFFECTED BY PROVISIONS OF U.S. SENATE BILL S. 2387 [a]

Company	Areas affected by proposed legislation: Annual domestic production([b]) 36.5 MM bbl or 200 B ft³	Annual domestic refining([b]) 75 MM bbl	Annual worldwide marketing([b]) 110 MM bbl	Transportation ([b])	Total ([c]) assets (millions)	Total long-term debt (millions) ([c])	Common shareholders ([c])	Total stockholders' equity (book value) (millions) ([c])	Market value of common stock as of Jan. 16, 1976 (millions) ([d])	Employees
Amerada Hess Corp	No	Yes	Yes	Yes	$2,255	$641	19,196	$945	$461	5,779
Ashland Oil, Inc	No	Yes	Yes	Yes	1,716	331	59,368	662	545	27,000
Atlantic Richfield Co	Yes	Yes	Yes	Yes	6,152	1,219	132,863	3,455	4,188	28,800
Cities Service Co	Yes	Yes	Yes	Yes	2,898	569	122,944	1,674	1,123	17,400
Continental Oil Co	Yes	Yes	Yes	Yes	4,673	893	69,192	2,054	3,498	41,174
Exxon	Yes	Yes	Yes	Yes	31,322	3,052	707,000	15,724	20,243	133,000
Getty Oil Co	Yes	Yes	No	Yes	3,004	158	16,632	1,835	3,185	11,364
Gulf Oil Corp	Yes	Yes	Yes	Yes	12,503	1,471	372,415	6,329	4,576	52,700
Marathon Oil	Yes	Yes	No	Yes	1,800	208	42,891	997	1,332	9,465
Mobil Oil Corp	Yes	Yes	Yes	Yes	14,074	1,729	226,100	6,436	5,169	73,100
Penzoil Co	Yes	No	No	Yes	1,798	797	46,303	515	651	9,487
Phillips Petroleum Co	Yes	Yes	Yes	Yes	4,028	658	131,621	2,274	4,342	30,802
Shell Oil Co	Yes	Yes	Yes	Yes	6,129	977	31,917	3,560	3,454	32,287
Standard Oil Co. of California	Yes	Yes	Yes	Yes	11,640	1,015	274,000	6,450	5,074	39,540
Standard Oil Co. (Indiana)	Yes	Yes	Yes	Yes	8,915	1,427	163,556	5,125	6,139	47,217
Standard Oil Co. (an Ohio corporation)	No	Yes	Yes	Yes	2,621	805	39,536	1,244	1,925	20,300
Sun Oil Co	Yes	Yes	Yes	Yes	4,063	679	48,211	2,247	1,152	27,707
Tenneco Inc	Yes	No	No	No	6,402	2,054	238,275	2,142	2,201	81,000
Texaco Inc	Yes	Yes	Yes	Yes	17,176	1,897	340,520	9,003	6,854	76,420
Union Oil Co. of California	Yes	Yes	Yes	Yes	3,459	648	76,400	1,923	1,442	15,364
Total					146,628	21,228		74,594	77,554	779,906

[a] U.S. Senate bill S. 2387 states that it shall be unlawful for companies to control businesses which qualify under under more than 1 of the following criteria: (a) Annual domestic production greater than 36,500,000 bbl m (100,000 bbl/d) of crude oil, condensate, and natural gas liquids or 200,000,000,000 ft³ (547,945 mft³/d) of natural gas. (b) Annual domestic refining greater than 75,000,000 bbl (205,479 bbl/d) of refined products. (c) Annual worldwide distribution or marketing greater than 110,000,000 bbl (301,370 bbl/d) of refined products. (d) Domestic or international transportation of crude oi or refined products in pipelines.

[b] Based on 1974 data as available from public sources.

[c] As of Dec. 31, 1974, reported in the annual report or 10-K of the company.

[d] Calculated as (common shares outstanding on Sept. 30, 1975, times closing common stock price on Jan. 16, 1976).

The chart will indicate to you the magnitude of the economic interests which are the subject of the divestiture bills. The total assets of the companies involved amount to more than \$146 billion. The aggregate long-term debt of these companies is more than \$21 billion. There are hundreds of thousands of people who own the shares and debt securities of these companies directly, and several million more if one counts indirect ownership through pension funds, mutual funds and similar institutions. The aggregate market value of the common stock equity of these companies amounts to more than \$77 billion and the companies have some 780,000 employees. If S. 2387 becomes law, it will trigger the largest series of divestitures in history. The assets held by the public utility holding company industry, the only sector of the United States economy even slightly comparable in size that was ever faced with legislative surgery of the kind contemplated here, amounted to a total of only \$17 billion in 1935.[3]

In light of the size of the transactions, the scope of the interests affected, and the potential effects upon United States energy policy and our relations with petroleum producing countries, Congress is under an obligation to examine most carefully and prudently the validity of the major premises which underlie the legislation, and to move cautiously if some or all of such premises are subject to serious challenge. The premise which I propose to challenge is the one that holds that a legislative divestiture program of the type contemplated can be accomplished quickly, easily, inexpensively and unbureaucratically.

III. METHODS OF DIVESTITURE

Assuming legislation such as S. 2387 has been adopted, how would one proceed? How in fact would a major oil company divest itself of various groups of assets and what problems would be raised by any such program?

As a practical matter, there appear to be only two methods for accomplishing the proposed divestiture program. A company can dispose of assets by selling them, whether to another company or to a newly formed company organized and financed for the purpose of acquiring such assets, or to an existing group, such as its own shareholders. In light of the size of the assets to be disposed of, it would seem to me—although I am not in any sense a financial expert—extraordinarily unlikely that new capital could be found to finance their purchase. I come to this conclusion at least in part because the requirements of the proposed bill, or the purported aims of divestiture, would not be accomplished if a selling oil company ended up owning the equity securities, or perhaps even the debt securities, of the buyer. In other words, a disposition by way of sale would clearly involve in large part cash, and I cannot believe that a simultaneous disposition of assets of this magnitude by 20 integrated oil companies, and of all pipeline assets of approximately 200 companies, could be financed on a largely cash basis, particularly since the most obvious group of buyers, that is the oil companies themselves, would in large part be inhibited by the bill itself or by general antitrust considerations from acting as buyers.

The second and far more likely method of divestiture, and the method often followed in divestitures of major assets required under antitrust decrees, is disposition of such assets in one form or another to the shareholders of the divesting company. This is what is normally referred to as a "spin off". In its simplest form this means that a company would transfer the assets to be disposed of—we might refer to them as prohibited assets—together with related liabilities to a subsidiary corporation, the shares of which are then distributed as a dividend on a pro rata basis to the shareholders of the company in question. Sometimes the shares, instead of being distributed as a dividend in this manner, are offered to existing shareholders in exchange for shares of the company making the distribution. Sometimes the distribution of shares of the new company owning the prohibited assets is accompanied by a simultaneous reduction in the outstanding equity capital of the distributing company. Whatever specific form a divestiture might take, it seems almost certain that an overwhelming part of the divestiture required by S. 2387 would as a practical matter have to be accomplished through some sort of spin-off of the type I have just described, because payment in cash for the divested assets is not required. Obviously divestiture could be accompanied by sales of some assets by some companies, and in fact it would seem likely that the massive restructuring required by the divestiture bills before you would be accomplished by some combination of disposals by way of sales and various types of spin-offs to existing shareholders.

[3] See 1941 SEC Annual Report at 69–70.

Having outlined the form a divestiture program might take, let me now try to analyze briefly the contractual and other problems which would be raised by a spin-off plus sale program in the case of any of the oil companies we have under discussion.

IV. LEGAL CONSEQUENCES OF DIVESTITURE

A. Contractual Arrangements

In an effort to determine the impact of S. 2387 upon existing contractual relationships, we have reviewed numerous documents relating to a number of oil companies which would be affected by the bill, consisting primarily of (i) indentures pursuant to which the companies have issued notes and debentures to the public, (ii) loan agreements and note purchase agreements with banks, insurance companies, and other institutional lenders, (iii) various documents, such as throughput agreements, charters and leases, which serve as security for, and are the source of payment of, outstanding indebtedness, (iv) concession agreements with foreign governments and (v) joint venture agreements with foreign governments and others. The major effects of the bill upon these documents may be summarized as follows:

1. *Violation of Covenants.*—The documents under which the oil companies have indebtedness outstanding (the "financing documents") contain provisions which prohibit certain actions by the oil companies and which were determined by the respective lenders to be necessary to safeguard their interests. There are a number of types of provisions commonly found in the financing documents which, depending upon the manner in which divestitute is accomplished, may be expected to be violated:

(A) provisions prohibiting an oil company and/or its subsidiaries from selling, conveying or otherwise disposing of (i) particular assets or (ii) a substantial part of its assets;

(B) provisions prohibiting an oil company from selling, conveying or otherwise disposing of the stock of certain of its subsidiaries, most notably its pipeline subsidiaries;

(C) provisions restricting the amount of dividends which an oil company may pay to its shareholders (in those cases where divestiture is accomplished by spin-off, the distribution to shareholders of assets of the magnitude we are considering could be expected to violate such provisions);

(D) provisions requiring an oil company to maintain a certain net worth or a certain ratio of assets to liabilities, or to meet other financial conditions;

(E) provisions requiring an oil company to comply with, or to keep in full force and effect, certain material contracts; and

(F) provisions requiring an oil company to maintain its corporate existence and keep in full force and effect various rights, franchises and licenses.

Attached hereto as Exhibits A through F, respectively, are examples of the various types of covenants referred to above.

Of course, many financing documents contain a number of these provisions. For example, the Sohio Pipe Line Company Note Purchase Agreement dated November 1, 1975, which is one of a series of interrelated financing documents pursuant to which $1.75 billion of the funds required for the construction of the Trans Alaska Pipeline System has been or is to be borrowed, provides that (i) The Standard Oil Company ("Sohio") will not, and will not permit any subsidiary to, dispose of any part of its net interest in the crude oil reserves in Prudhoe Bay (except under certain circumstances, none of which would include a disposition pursuant to divestiture); and (ii) Sohio will not, nor will it permit any of its subsidiaries to, sell or otherwise dispose of, or part with control of, or offer to sell, any shares of stock of any class of Sohio Pipe Line Company (which owns Sohio's interest in TAPS) to any person other than Sohio or a wholly-owned subsidiary of Sohio. Accordingly, the divestiture by Sohio of its pipeline subsidiary would be violation of the Note Purchase Agreement, as would a decision by Sohio to divest itself of producing assets.

Violation of the types of covenants referred to above results, either immediately or after a period of time following notice of such violation, in default under the respective financing documents. Such default in turn permits the acceleration of all indebtedness issued thereunder. In addition, many financing documents contain what are called "cross-default" clauses to the effect that the acceleration of any other indebtedness of the oil company itself constitutes a default under the financing documents. Consequently, divestiture of prohibited assets would result in a very substantial portion of outstanding oil company indebtedness becoming

subject to acceleration pursuant to the terms of the financing documents. The insistence upon the contractual right to accelerate under such circumstances reflects the creditors' judgments that the occurrence of such violations exposes them to unacceptable risks of nonpayment.

Should S. 2387 become law, the FTC would presumably not permit massive acceleration of oil company debt by allowing creditors to enforce the contractual provisions which they insisted upon as a condition to extending credit to the oil companies and upon which they rely for protection of their investments.[3] The FTC would instead require that such creditors become debtholders of some or all of the newly formed entities resulting from the divestiture. It would not, however, appear to be "fair and equitable" for the FTC to require existing creditors to accept this new indebtedness without the benefit of any contractual safeguards. As a result, the FTC will be required to determine what contractual provisions should be binding upon these entities in order to adequately protect the interests of such creditors. I will discuss in more detail later the extent of this type of involvement which S. 2387 imposes upon the FTC, and its consequences.

2. *Prohibition of Certain Contractual Relationships.*—The bill makes it unlawful for an oil company which is a major producer, refiner or marketer to own or control any transportation asset. The definition of "control" extends to any "direct or indirect legal or beneficial interest in or legal power or influence over another person, directly or indirectly, arising through . . . substantial or long-term contractual relations . . . ." As a result, the bill would prohibit the continued existence of various contracts between oil companies and their pipeline subsidiaries which constitute the security for outstanding indebtedness. For example, a very substantial amount of long-term financing has been done in reliance upon the security afforded by throughput agreements and completion agreements between pipeline companies and their parents. Such throughput agreements provide that the parents of the pipeline subsidiaries (i) agree to ship sufficient amounts of petroleum products through the subsidiary's pipeline to enable the subsidiary to satisfy all of its indebtedness and, (ii) in the event sufficient petroleum products are not shipped, agree nevertheless to make available to the subsidiary—as advance payments for future shipments—amounts sufficient to allow the subsidiary to satisfy all of its indebtedness. Under completion agreements the shareholders of a pipeline company agree to advance sufficient funds to the subsidiary (as contributions to capital, subscriptions for additional stock or subordinated advances) to allow the subsidiary to satisfy all of its indebtedness.

In each case, the obligation of the parents under these agreements is the source of payment of, and is assigned to the lenders as security for, loans advanced to the pipeline subsidiary. Yet the continued existence of these contracts three years after passage of the bill could well subject the parties to criminal sanctions. Furthermore, a decision by the FTC to permit these agreements to remain in effect after the parent companies divest themselves of their pipeline subsidiaries would, in effect, require the parent companies to make their credit available to an unrelated company in unlimited amounts.[4] Moreover, in the case of completion agreements it would not be permissible to treat funds advanced by the former parent company as contributions to capital or as subscriptions for additional capital stock (as contemplated by the agreements), and even if one were to consider requiring the former parent company to make such advances as loans, this would still violate the "control" restrictions of the bill since the definition of "control" extends not only to "substantial or long-term contractual relations" but also to "loans".

The bill would also render unlawful the performance of certain existing contracts, including particularly concession and joint venture agreements, which require some combination of producing, refining, marketing or transportation activities. For example, if the terms of a concession agreement require that an oil company both produce and market petroleum products, then the oil company will have to own or control both production and marketing assets in order to

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[3] It should be noted that S. 2387 is silent as to the ways in which the FTC might act to approve "fair and equitable" plans of divestiture. We have assumed for the purposes of this testimony that the FTC would exercise the power to rewrite contractual provisions and prohibit massive accelerations. Of course, if a court found that the FTC did not have this power, or if the FTC chose not to exercise it, it is clear that divestiture would be followed by default, acceleration and probably the bankruptcy of certain of the companies.

[4] Throughput and completion agreements customarily define the indebtedness for which the parent is obligated to provide to mean all liabilities of the subsidiary whatsoever, including all indebtedness then existing or incurred thereafter, all taxes, assessments and other governmental charges, all operating expenses and all expenditures for capital items.

perform. The bill, of course, prohibits such ownership or control. The FTC might determine that such an agreement should be divided into two contracts to be performed by newly constituted production and marketing entities. It may be, however, that such a division makes no economic sense and the other party may decide that the performance which would be received under such circumstances would not be the performance bargained for. This may be particularly true in the case of concession agreements or joint venture agreements with foreign governments or other foreign parties where it is clear that the foreign entity is looking not only to the actual party to the agreement (which is often a subsidiary formed solely for the purpose of the agreement), but rather to the consolidated group of which the contracting party is a part. Moreover, serious questions are presented as to whether, and under what circumstances, an affected party may be required to enter into separate agreements with newly constituted entities in substitution for a single agreement with one integrated entity which was originally entered into. It does seem quite certain that foreign governments or other foreign entities could not be so required.

3. *Prohibition Against Assignment.*—The bill will have a very broad impact on the entire range of oil company contracts to the extent its implementation results in a violation of provisions which generally prohibit the assignment, transfer or conveyance of rights and obligations under such contracts without the approval of the other party. Such violations may be claimed, for example, either because of (i) a sale of the assets necessary for the performance of a contract to a new entity and the assumption by that entity of the obligations under the contract, or (ii) a total change in the stock ownership of the original contracting party. The likelihood of a party asserting such a violation would depend on factors such as (i) the extent to which the party views the integration of the oil company as necessary for the adequate performance of the contract, (ii) whether or not the party sees the contract as advantageous and (iii) the alternatives which the party perceives to exist. While this problem will exist throughout the entire range of contracts, for the reasons set forth above this issue may be most sensitive in the context of concession and joint venture agreements where it may reasonably be expected that it is the resources of the consolidated group which the other party is relying upon. In such cases, newly formed entities may be at a competitive disadvantage with vertically integrated foreign oil companies.

It may also be expected that the implementation of the bill will give rise to claims by some parties that they are excused from the performance of certain contracts on the ground of "commercial frustration"; that is, as a result of an unforeseen and supervening event the performance which the party will receive from newly constituted entities does not have the value bargained for.

B. Other Problems

The implementation of the bill will give rise to a number of other serious problems—some or all of which may be susceptible to legislative solution—which do not appear to have received adequate consideration.

Pension Plans.—Employees of the oil companies will have a large stake in any divestiture, since it would result in the splitting up of currently integrated oil companies into a number of newly formed entities, each of which would carry on a part of the business formerly conducted with a part of the former employees. This would seem to require a determination as to how to split each existing qualified pension or profit sharing plan into a number of plans. Under the Employee Retirement Income Security Act of 1974 ("ERISA"), vested pension rights of employees are protected by the guarantee of the federal Pension Benefit Guaranty Corporation (the "PBGC"). ERISA also creates a contingent liability in the event that a pension plan is terminated and the value of the plan's benefit guaranteed under ERISA exceeds the value of the plan's assets allocable to such benefits; any such excess is paid by the PBGC, which then has a right to recover such payment from the employer, up to 30% of the employer's net worth. Provisions of ERISA desiigned to state the effect on this contingent liability arising from the sale, merger or division of the employer are ambiguous, and there has as yet been no published interpretation of these provisions by the PBGC or by any other governmental agency or department. If one of the newly formed entities after divestiture should become bankrupt and its pension plan terminated, the PBGC may well contend that the resulting contingent employer liability would be imposed upon all of the newly formed entities and not merely upon the bankrupt entity. Accordingly, even if none of the pension plans of any of these entities is ever terminated, uncertainty may exist as to the nature and extent of the con-

tingent employer liability of each such entity and the form of disclosure to the investing public which would be required under the Federal securities laws.

Tax Consequences.—Section 355 of the Internal Revenue Code of 1954, as amended, permits a "spin-off" of assets to stockholders to be done on a tax-free basis provided that certain conditions are met. In such event the stockholders do not recognize a gain or loss on the receipt of the distributed stock of the "spun off" corporation or corporations, but merely a change in their basis in the stock which they then own. It is not at all clear, however, whether any or all "spin-offs" pursuant to S. 2387 could comply with the provisions of Section 355, and, as a result, such "spin-offs" might have substantially adverse tax consequences for existing oil company stockholders. It is also not clear how much of any mandated divestiture of assets would be accomplished by means of a "spin-off", and the sale of prohibited assets would produce a taxable event for Federal income tax purposes. In addition, the transfer of shares of stock or assets may result in the imposition of state and local taxes resulting in further adverse consequence for stockholders and the newly formed entities.

Legal Investment.—If the newly formed entities are to obtain necessary funds for working capital and capital expenditures, they will need ready acess to the market for the issuance of securities. Various states preclude their savings banks, insurance companies and fiduciaries from investing in securities of certain issuers unless the issuer has a specific ratio of earnings to fixed charges over a specific historical period. It is not clear whether the newly formed entities would be deemed to have been in existence for the necessary historical period within the meaning of such statutes, or how the earnings and fixed charges of the predecessor integrated company would be allocated among the new entities for purposes of such statutes. Failure to satisfy the provisions of these statutes would, as a practical matter, make it difficult or impossible for a large part of the oil industry to obtain financing from institutions governed by such legal investment laws—institutions would have provided a major portion of such financing in past years.

V. FTC INVOLVEMENT: DURATION AND IMPLEMENTATION

A. Resolution of Conflicting Interests

As the foregoing discussion clearly indicates, the divestiture program mandated by S. 2387 would result in a massive, "forced" breach by the oil companies of financing agreements and other contractual arrangements to which they are parties. In other words, forced divestiture of assets along the lines required by S. 2387 could not possibly be accommodated within existing contractual arrangements, and, therefore, such contractual arrangements would have to be "rewritten" by the divestiture plans. In particular, unless the divestiture plans restructured the financed documents of the affected oil companies, divestiture would result in the right of creditors to accelerate and to make immediately due and payable a very substantial portion of the outstanding indebtedness of the affected oil companies.

Thus, the bill will require the FTC to become embroiled in nearly all aspects of the contractual relationships existing between the oil companies and stockholders, creditors, employees and other parties. The FTC will be required to accommodate existing contractual relationships with the newly structured oil industry brought about by divestiture. As a result, the FTC will be required to review, modify and approve plans submitted by the oil companies which, among other things:

(a) Allocate assets and liabilities of existing oil companies among the newly constituted entities;

(b) Restructure the rights of persons holding stock in oil companies and of persons holding options or warrants to purchase such stock or securities convertible into such stock;

(c) Restructure the rights of public and private creditors of the oil companies;

(d) Determine the financial covenants and restrictions which will be imposed upon newly constituted entities to fairly protect the rights of such creditors;

(e) Revise commercial contracts whose provisions no longer make sense under the changed circumstances resulting from divestiture;

(f) Revise existing union and other labor agreements which will probably require renegotiation subsequent to divestiture (presumably "ominibus" union contracts will not be permissible after divestiture); and

(g) Revise employment contracts, pension and profit-sharing plans, leases and insurance policies (or lack thereof since existing oil companies may often

choose or be permitted by contract to self-insure, whereas appropriate insurance requirements will have to be determined for new entities).

The complexity of these issues which the FTC will be called upon to resolve must not be underestimated. For example, how does one determine how much of the indebtedness of an existing oil company should be allocated to each of its successor entities? Should the amount of such liabilities be based upon the amount of assets allocated to the entity, the amount of earnings which the entity may be anticipated to generate or some other standard? For purposes of determining the amount of dividends which a new entity will be entitled to declare, how much of the earnings and profits of an existing oil company should be allocated to each successor entity? How should the tax attributes of an existing oil company be allocated; which entites should get the benefits of tax carryforwards carrybacks, and how does one determine what portion of an existing oil company's previous tax liability a loss carryback may be applied against? What portion of existing pension plan liabilities should each entity assume? Should each successor entity be jointly and severally liable in respect of all outstanding litigation against an existing oil company? How does one allocate contingent liabilities, such as future litigation or tax deficiencies?

Perhaps a specific example of the issues the FTC will face would be in order. Almost all oil company indentures or loan agreements contain provisions to the effect that the company in question will not dispose of all or substantially all of its assets unless the successor company assumes all liabilities and obligations in respect of the indebtedness in question. For some of the affected oil companies, the divestiture required by S. 2387 would involve a group of assets sufficiently large to bring into play such clauses. Holders of the indebtedness in question, or trustees on their behalf, could be expected to argue that such clauses would require each of the successor companies (i.e., the companies owning the assets disposed of) to assume joint and several liability with respect to the indebtedness, so that the holders of the indebtedness could look to each of the successor entities to be responsible for 100% of such debt, in case one or more of such entities could not service its allocated portion. It is questionable, however, whether S. 2387 would permit this kind of "cross guarantee" among the entities, in view of the prohibition against control of prohibited assets by way of substantial or long-term contractual relations. On the other hand, the plans as approved by the FTC are required to be "fair and equitable" to all persons concerned, and persons concerned clearly include holders of oil company indebtedness. This is just an example of the kind of problems which the divestiture plans will have to deal with, which the FTC will have to make decisions on and which parties affected are likely to dispute both before the FTC and in the courts.

B. Accommodation with Federal Governmental Interests

The bill is silent on another problem facing the FTC: accommodation of other governmental interests. Pipelines, for example, are subject to ICC jurisdiction. Presumably there would have to be some consultation with ICC officials about the proper allocation of pipeline assets in the event of divestiture. A large number of governmental agencies, including the Treasury, the Interior Department and the Department of State, currently have jurisdiction in the general area of energy policy. Would the FTC have to get approval from all of these offices to insure that a particular divestiture did not interfere with general governmental policy in areas such as foreign relations? And, of course, there will be effects upon agencies like the SEC, which will have to resolve how the entities should disclose their confused and tentative status, IRS, which will have to review the plans for tax consequences, and the Defense Department, a large oil buyer and supplier of crude.

C. Special Problems of Foreign Persons and Governments

A further and special group of problems will undoubtedly be raised by the requirement of S. 2387 that non-United States assets of the prohibited sort will also have to be disposed of, and "substantial" or "long-term" contractual arrangements relating to foreign prohibited assets will have to be terminated. It cannot be doubted that foreign third parties which have contractual relationships with the oil companies, including foreign holders of oil company indebtedness issued under foreign loan agreements and containing covenants of the kind described above, will seek to enforce their contractual rights in appropriate foreign forums. It can also be expected that foreign courts will support the assertions of such third party foreigners—particularly foreign governments—that their contractual rights cannot be abrogated by unilateral United States action. The

result will be, in addition to the loss to the oil companies of valuable foreign contractual rights as a result of termination actions taken by foreign third parties based on "forced" breaches of contract caused by the divestiture program, acceleration of oil company debt held by foreign creditors under loan contracts not governed by U.S. law and claims by foreigners for substantial damanges for breach of contract. These claims are likely to be upheld in foreign courts and enforced against the oil companies' foreign assets.

These and a host of other difficult issues must be resolved by plans which the FTC has the responsibility of approving. Moreover, it can be expected that all classes of persons affected by the plans will intervene and participate vigorously in proceedings before the FTC with respect to such plans. Given the number of companies which the bill covers, the difficulty of the issues presented, the large number and variety of classes of persons affected by the bill, the magnitude of the interests involved and the likely event that almost all plans will be submitted to the FTC just before the one year deadline for their submission, one cannot reasonably believe that the FTC will be able to perform the role contemplated for it without the establishment of a new and large bureaucratic apparatus, and even then, the job will take years.

It can also be expected that affected persons will challenge substantially all of the plans submitted to the FTC before the Commission itself and, in addition, will seek judicial review of the FTC's decisions in the Courts of Appeals and the Supreme Court. Indeed, the number and complexity of the issues to be resolved, together with the large numbers of persons whose interests will be affected, virtually insures that the implementation of S. 2387 will give rise to a decade or more of litigation during which substantial uncertainty will exist as to the nature and extent of a broad range of existing contractual arrangements and legal obligations within the oil industry.

VI. PAST DIVESTITURES

When presented with the facts as to the difficulty and far-reaching nature of the proposed oil industry divestitures, proponents sometimes point to the Public Utility Holding Company Act of 1935. The administration of the Holding Company Act does provide some instructive history. Although the statute itself provided for time delays to allow for constitutional testing of various provisions, suggesting Congressional awareness of the magnitude of the task and the diversity of interests affected, it was 1946 before the constitutionality of the Act was upheld, and the work of breaking up holding companies continued through the 1960's, although most of it was concluded in the late 1940's and early 1950's. Moreover, a number of factors indicate that the divestiture mandated by the Holding Company Act was far less complex than the divestiture which S. 2387 contemplates:

(i) The magnitude of the undertaking was far smaller—the amount of assets involved and the number and variety of the classes of affected persons was substantially less than would be involved in the oil industry, and the utility industry was entirely a domestic one.

(ii) The assets of the holding companies and subholding companies were not operating assets but largely the securities of operating companies and therefore the break-up of these holding companies did not involve the formidable problem of allocating the assets and liabilities of existing operating companies among a number of newly formed companies.

(iii) The holding companies were in financial disarray in 1935, and thus reorganization was something that would have had to be faced in any event.

(iv) The Holding Company Act did not require the divestment of operating assets by operating companies. The utility industry was essentially a local industry, and viable operating companies with existing management and earnings histories were already in place. Essentially what the Act required was the lopping off of the dead branches of the holding company superstructure, the only purpose of which was to maintain control of the operating companies.

Indeed, the history of the Public Utility Holding Company Act would seem to indicate that even where you have a reasonably carefully drafted statute based on a full record, which was designed to deal with a financially insecure industry far less massive or complex or operationally integrated than the oil industry, the time for divestiture can stretch out beyond 20 years.

But divestiture always takes longer than appears at the beginning. In 1952, for example, the Government settled an antitrust suit against Loew's, Inc. (now MGM) by a consent decree that required divestiture of movie theater assets from movie production assets within two years. Yet, due to difficulties of debt allo-

cation and debtholders' rights, the divestiture was postponed by the court several times, finally being accomplished in 1959, seven years after the date of the decree. And Loew's seemed in 1952 to be a relatively easy company to divide, with assets totalling about $218 million and long term debt, held by a few insurance companies, of less than $30 million. Other antitrust divestitures, as well as reorganizations resulting from bankruptcies, also indicate the likelihood of extensive time delays.

VII. COMMENTS ON THE BILL

As I have attempted to demonstrate, the implementation of S. 2387 will give rise to a substantial number of issues of great complexity, the resolution of which will have serious consequences for large classes of persons. In such circumstances, it would not be responsible for Congress to set such events in motion without the most careful consideration and reflection as to the form of legislation which would govern any required divestiture. I respectfully submit that the bill does not evidence the consideration and reflection called for.

For example, a literal reading of the provisions of the bill would require any oil company which is a major producer, refiner and marketer, as defined in the bill, to get out of the oil business altogether. Under the bill, once a company achieves "major" status in an area, it retains such status for all time. Section 4 of the bill provides that a "major" in any one area may not own or control any assets in any other area,[5] but fails to provide that a company which elects to remain a "major" in only one area must only satisfy the prohibition of Section 4 with respect to a "major" in that area and is in compliance after it has divested itself of all assets in the other areas. For example, assume X Company is a major producer, refiner and marketer and seeks to remain only in the area of production, divesting itself of all other assets. Despite the fact that X Company has divested itself of all refining and marketing assets, it nevertheless remains a "major" refiner and marketer within the wording of the bill. As a consequence, X Company will violate subdivision (3) of Section 4 of the bill, which prohibits major refiners or major marketers from owning any production assets. Indeed, X Company cannot avoid violating the bill if it remains in any area of the oil business.

As discussed above, the bill prohibits a "major" in one area from owning or controlling assets in any other area, and the definition of "control" extends to "substantial" and "long-term" contracts. The bill would, therefore, explicitely outlaw any long-term contractual arrangements between independent producers, marketers, refiners or transporters. Further, any contract between such independent producers, marketers, refiners or transporters that involves more than a small amount of crude oil or other petroleum products would arguably run afoul of the bill's prohibition against "substantial contracts", thereby subjecting the contracting parties to the possibility of criminal sanctions. Despite the fact that S. 2387 is a criminal statute, it provides no definition of "long-term" or "substantial" to guide the companies subject to the bill or the FTV in enforcing the bill. The definition of control contained in the bill seems to go a long way toward prohibiting the kind of contractual relations which would be necessary to allow independent companies to function effectively.

Finally, the bill makes it unlawful for a company to own or control prohibited assets three years after its enactment, and provides no mechanism for an extension of this three-year period. Given the virtual certainty of constitutional challenge to the bill and other substantial litigation surrounding the submission of any plan of divestiture to the FTC for its approval, it seems quite likely that a company attempting in good faith to meet the requirements of the bill may nevertheless be unable to divest itself of all prohibited assets within the prescribed period. If divestiture cannot, as a practical matter, be accomplished within three years, as I believe to be the case, then a statute requiring divestiture to be accomplished within that period, and imposing criminal sanctions for its violation, would be vulnerable to an attack on procedural due process grounds. Nor does the bill make any provision for a company obtaining "major" status during the three-year period following enactment of the bill. For example, a "non-major" producer which owns marketing and refining assets might, by virtue of a substantial discovery, become a "major producer" several years after enacement of the bill and face the threat of immediate criminal prosecution unless it can instantaneously divest itself of its prohibited assets.

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[5] Subject to the exception, previously noted and not germane to the issue under discussion, that a major marketer may own "non-major" refining assets.

VIII. CONCLUSION

Where, then, does this study of legal consequences lead us? The drafting inadequacies of the bill itself raise questions as to whether this kind of simple-sounding legislation is a legally viable approach to disintegrating the largest, and one of the most complex, industries in the world. Moreover, the inevitability of legal challenges to the bill and to its implementation, together with the difficulty and scope of planning and implementing the break-up of all of the major oil companies in the United States, should also make it abundantly clear that any divestiture statute is not at all a simple, swift, unbureaucratic or inexpensive way of resolving what is perceived to be wrong with the oil industry today. In terms of delay, I am not quibbling about the three years in S. 2387 or the five years provided by Senator Abourezk's amendment last October; in my view, it would take at least ten or as long as twenty years to resolve all of the questions raised, from the time of initial submission of divestiture plans to the FTC by the companies, through the review and challenge of those plans and the court tests, to the final carrying out of a divestiture order. The history of the Public Utility Holding Company Act supports this view.

Recognition of these considerations should put to rest the suggestion that a bill like S. 2387 is an appropriate short cut to the perils of antitrust litigation; no matter what route is selected, the determination of such important questions will of necessity take many years to accomplish. In light of that fact, I believe Congress should recognize what it is giving up in selecting statutorily required divestiture rather than leaving the question to traditional court review and supervision.

A divestiture statute in many ways represents a sharp departure from historical American antitrust approaches. Congress has never before found that size alone, or the vertical integration structure generally, is anti-competitive. Moreover, it has traditionally approached antitrust legislation on an across-the-board rather than single-industry basis. Finally, antitrust law enforcement has been surrounded with procedural safeguards. In divestiture cases, for example, the government has the burden of showing not only that substantial anti-competitive effects have resulted from the alleged conduct and will continue to result in the industry, but also that wide scale vertical disintegration is the best—or, as a minimum, the least harsh—method for overcoming these anti-competitive effects, before the divestiture remedy will be authorized by the court. During the course of litigation bearing on these questions, the court has the benefit of adversary testimony and cross-examination on the premises of anti-competitive effects, as well as expert discussion on the appropriateness of any particular remedy. Although opposing views of witnesses have been presented to the Subcommittee and colloquies have taken place, these issues of effect and appropriateness, as they relate to S. 2387, have never been subjected to the cauldron of a true adversary proceeding.

For example, critics have asserted, and one of the proposed legislative findings in S. 2387 accepts as a premise, that the antitrust laws have been ineffective in curbing anti-competitive abuses in the petroleum industry. Yet there is pending at this very moment an FTC proceeding seeking, among other forms of relief, the vertical disintegration of the eight largest domestic oil companies. At least one source of this proceeding, and one relied on in the bringing of the action, was a 1973 report of the FTC Staff which pointed to a number of particular factors which, in the staff's judgment, had reduced competition in the oil industry, among them the oil depletion allowance, oil import quotas, federal tax credits for oil royalties paid to foreign governments and state proration procedures. But since 1973 Congress has eliminated the depletion allowance and severely curbed the use of the foreign tax credit by American petroleum companies, the President has removed the import quotas and state proration limits have become something of a dead letter. The FTC will have to determine, in light of these developments, whether there are serious anti-competitive effects in the petroleum industry, whether any such effects result in large measure from vertical integration or from other causes, and whether the divestiture asked for at the time of initiation of the suit (which, by the way, was far less extensive than the remedy set forth in S. 2387) would still be an appropriate remedy to curb the alleged abuses. Surely, Congress must ask itself whether this FTC proceeding with its built-in adversary safeguards is not a better way to resolve such questions than radical legislative surgery.

Congress should also ask whether it is best to resolve such questions by across-the-board legislation based upon its judgment, at a single time, regarding the industry structure most productive of competition. Antitrust principles have traditionally developed on a case-by-case, rule of reason basis which permits economic, political and social hypotheses to be tested not only in adversary proceedings, but, afterward, by actual experience under a court's decree. Conduct once viewed as anticompetitive may be found in later cases to be appropriate, because of changing views of the law or differing factual circumstances. Moreover, if a remedy proves ineffective or impractical, it may be discarded in subsequent cases; even in cases already decided, if the decreed remedy proves harsh a court may modify the decree. No such possibility of rectifying mistakes or adapting to changing circumstances exists to any meaningful extent when legislation replaces litigation—once divestitures pursuant to statute occur, re-integration could not take place, at least on any short-term basis.

Thus, the selection of the legislative route by Congress brings forth a deep responsibility; it is incumbent upon the legislative branch to use the greatest possible care in passing a statute that can have such extreme consequences as the break-up of all large United States oil companies. It behooves Congress itself to make a full examination of the premises behind the legislative findings backing such a bill, not in haste or in heat, but in reasoned examination of the conduct alleged, the reasonable anticipation of future conduct and the appropriateness, effectiveness and expense of any remedy. Only after such a searching determination should Congress make a legislative finding leading to so drastic a measure, because after passage the Congressional determination will be effectively final.

In addition, Congress must ask itself the question: What happens to this country's energy industry during the ten to twenty years of uncertainty and litigation which will inevitably result from passage of S. 2387? As divestiture programs are proposed by the various oil companies, reviewed and argued before the FTC, litigated by the various interests affected, this enormously complex and vital sector of our industrial economy will be in what amounts to a state of chaos. Until plans are finally approved, litigation concluded and plans put into effect, literally no one will know who owns what, what kind of companies will emerge, what their capital structure will look like or how viable and competitive, both domestically and overseas, the fragmented components will be. Congress must carefully consider whether an industry in this state of uncertainty could finance on a private basis the huge capital-intensive projects which any national energy policy for this country requires.

Exhibit A

Restrictions on Disposition of Assets

So long as the Production Payment remains in force and effect [Oil Company] will not, without the consent in writing of [Lender], sell, convey, assign, lease, sub-lease or otherwise dispose of any Subject Interest (or any portion thereof) or release, surrender or otherwise abandon any Subject Interest (or any portion thereof) . . .

If any of the following events ("Events of Default") shall occur, namely, if: the Charterer and/or [Oil Company] ceases or threatens to cease to carry on its business or (without the prior written consent of [Lender] . . .) disposes or threatens to dispose of a substantial part of its businesses, properties or assets or the same are seized or appropriated;

[Oil Company] covenants and agrees that from the date of this Guaranty Agreement and thereafter so long as [Lender] holds any of the Notes, [Oil Company] will not . . . sell, lease, transfer or otherwise dispose of all or a substantial part of its properties and assets, or consolidate with or merge into any other corporation or permit any other corporation to merge into it . . .

Exhibit B

Restrictions on Disposition of Stock of Subsidiaries

[Oil Company] will not, nor will it permit any of its subsidiaries to, sell or otherwise dispose of, or part with control of, or offer to sell, any shares of stock of any class of [subsidiary] to any Person other than [Oil Company] or a wholly-owned subsidiary of [Oil Company], or entertain any offer from any Person other than [Oil Company] or a wholly-owned subsidiary of [Oil Company] to purchase any

shares of stock of any class of [subsidiary], and [Oil Company] will not permit [subsidiary] (either directly, or indirectly by the issuance of rights or options for, or securities convertible into, such shares) to issue, sell or dispose of any shares of any class of its stock except to [Oil Company] or to a wholly-owned subsidiary of [Oil Company].

[Oil Company] covenants and agrees that from the date of this Guaranty Agreement and thereafter so long as [Lender] holds any of the Notes, [Oil Company] will not . . . fail at any time to own all of the outstanding capital stock (other than directors' qualifying shares) of [subsidiary] either directly or through one or more of its wholly-owned subsidiaries . . .

[Oil Company] will not sell, transfer or otherwise dispose of any voting shares of [pipeline subsidiary] of any class to any person and will not permit [pipeline subsidiary] to issue, sell or otherwise dispose of any of its voting shares of any class to any person other than [Oil Company] . . .

Exhibit C

Limitation on Dividends

[Oil Company] will not pay any dividend (other than stock dividends) or any of its stock and [Oil Company] will not, and will not permit any of its Subsidiaries to, make any payment on account of the purchase, redemption or other retirement of any of the [Oil Company's] stock or make any other distribution in respect thereof (each such dividend, payment and distribution being herein called a "stock payment"), except that [Oil Company] may make any stock payment if after giving effect thereto the aggregate amount of all stock payments made after December 31, 1974 shall not exceed the sum of (1) the consolidated net profit, after taxes and extraordinary items, of [Oil Company] and its Consolidated Subsidiaries for the period from December 31, 1974 to the date of the making of such stock payment, such period to be taken for the purpose as one accounting period (except that consolidated net profit after taxes and extraordinary items shall be calculated exclusive of a charge estimated as of June 1, 1975 to be [dollar figure], currently proposed by the Financial Accounting Standards Board, to provide deferred income taxes on capitalized intangible drilling costs incurred to January 1, 1975, which costs were previously deducted for Federal income tax purposes) plus (2) $30,000,000.

[Oil Company] will not declare or pay any dividends (except dividends payable in common stock of the Company) or make any other distribution on any shares of its capital stock of any class or make any payment on account of the purchase, redemption or retirement for value (other than with the proceeds of additional stock financing) of any shares of such stock, if the Net Working Capital of [Oil Company] (as at the end of a calendar month not more than 50 days prior to the date of such declaration, payment or distribution) shall, after giving effect to such declaration, payment or distribution, be thereby reduced below the greater of (x) the sum of $2,000,000 or (y) an amount equal to one-half of the principal amount of the Funded Debt of [Oil Company] that becomes due and payable . . . during the 12 months' period commencing at the end of such calendar month.

Exhibit D

Maintenance of Financial Requirements

[Oil Company] will, on or before __________ in each year beginning with the year ____, deliver to the person to whom the Notes were originally issued, and lodge at the office of [Oil Company] and make available for examination purposes at said office to any other holder of the Notes, a Certificate of [Oil Company] (herein referred to as the "Annual Net Tangible Assets Certificate") stating, at the close of business December 31 (herein referred to as the "Determination Date") of the year immediately prior to the year in which said Certificate is made, the following: that the Net Tangible Assets of [Oil Company] on the Determination Date are at least equal to 2½ times the amount of Funded Debt of [Oil Company] on said date; or, in the alternative, stating that the Net Tangible Assets of [Oil Company] on the Determination Date are a specified amount less than 2½ times the amount of Funded Debt of [Oil Company] on said date.

[Oil Company] will not, and will not permit any Consolidated Subsidiary to, create, assume or permit to exist any senior funded debt unless after giving effect thereto (and to the application of proceeds thereof) the consolidated senior funded debt of [Oil Company] and its Consolidated Subsidiaries shall not exceed 75% of the consolidated Tangible Net Worth of [Oil Company] and its Consolidated Subsidiaries.

[Oil Company] will continuously maintain a Net Worth of not less than $1,500,000. For purposes of this § . . . : "Net Worth" means its net worth at and as of the particular date, composed of the sum of all amounts, determined in accordance with generally accepted accounting principles, which would properly appear on its balance sheet dated such date as (A) the par or stated value of all outstanding paid-in capital stock and (B) capital, paid-in and earned surplus (a negative amount, in the case of a deficit), less the sum of (C) any surplus or write-up resulting from any reappraisal of any property or asset, (D) any amounts at which good will, patents, trademarks, copyrights and deferred charges, including but not limited to unamortized debt discount, debt expenses and organization expenses, but not prepaid expenses, appear on the asset side of such balance sheet, (E) any amounts at which shares of its capital stock appear on the asset side of such balance sheet, (F) any amounts of indebtedness not included on the liability side of such balance sheet and (G) the amount of any net worth otherwise required to be set aside or reserved by it pursuant to any law or regulation or any agreement or instrument.

Exhibit E

COMPLIANCE WITH CERTAIN AGREEMENTS

[Oil Company] will perform and observe all agreements, covenants and undertakings of [Oil Company] contained in the Completion Agreement, the Throughput Agreement and the related . . . Assignment, and will not consent to any amendment or termination of the Completion Agreement or the Throughput Agreement except as provided therein.

[Oil Company] will promptly . . . perform or cause to be performed each and every act, matter or thing required by, each and all of the leases to which [Oil Company] is a party or in which it has any interest and will do all other things necessary to keep unimpaired [Oil Company's] rights thereunder and prevent any default thereunder or any forfeiture of any rights of [Oil Company] in respect thereof . . .

Exhibit F

MAINTENANCE OF CORPORATE EXISTENCE

[Oil Company] covenants and agrees that so long as any of the Notes shall be outstanding [Oil Company] will do or cause to be done all things necessary to preserve and keep in full force and effect its corporate existence . . .

[Oil Company] will take or cause to be taken all such action as from time to time may be necessary to maintain, preserve or renew its corporate existence.

Senator HRUSKA. Mr. Bator, your testimony suggests and, in fact, might be said that the minimum period of time for litigation to settle the many complex legal problems and reach a leveling-off period would be about 10 years, but might run up to 20 years.

Mr. BATOR. Yes, sir.

Senator HRUSKA. What will be the state of the petroleum industry and all of its facets during that period of uncertainty and lack of knowledge, the lack of factual basis, for the status of this litigation?

Is there any way we can assess and we can estimate what will happen to exploration, production, to refining, marketing, transportation and these problems?

What will be the effect? Will they keep on going and will business be conducted as usual or will there be some burdens, some apprehensions, even apprehension of a prison sentence, perhaps, or a great

fine? Will that have sort of a stultifying effect upon the efforts of those engaged in this petroleum industry to do business as usual?

What answers can we look for? If we're going to be practical and all, and in view of the history of other divestitures—I'm going to ask you some questions about that after a while.

There must be some consideration given to what happens in that interval. Can you comment on that, please?

Mr. BATOR. Yes, sir, as best I can. I think you will have—the word I used was "chaos"—when you have a period of total uncertainty, where third parties dealing with this industry will know that, at some point, 5, 10, 15 years later, they are going to be dealing with an entirely different structure, they are going to be enormously reluctant to contract or to enter into relationships with, and to conduct business with the oil companies in a normal manner.

We should also, I think, not underestimate the absolutely enormous amount of effort and time that the oil companies will have to put into this restructuring program. They are not going to be out there digging wells and producing oil and gas; they are going to be talking to lawyers and arguing before the FTC.

This is not really lawyer's expertise, but an industry in this kind of state is going to become an industry that is not keeping its mind on producing oil, trying to find oil or whatever, except to the extent it has to continue to some degree. But its real emphasis is going to be on trying to sort out the restructuring program to see where it comes out.

And it seems to me you're going to have creditors, who do not know who they are lending money to, you are going to have suppliers who do not know who they are supplying to. I think it is going to be a sort of a disaster area for 10 or 15 years. I see no solution to that, given this kind of absolutely massive surgery that these bills would purport to perform.

Senator HRUSKA. We know that this industry is a dynamic one. There is inherently wrapped up in it the necessity for constant expansion, for constant improvement, for better technology. It requires not only moneys for exploration, but also in the field of technology in research and development.

Is it reasonable that the investing public will respond to requests and invitations to invest in that type of expansion and exploration, research, and development, in this 10-year to 20-year interim?

Mr. BATOR. Again, as a lawyer, sir, I am not really expert in that, but I can't believe they would. Mr. Gary's testimony goes directly to that point, that, during this period, in effect, people will be reluctant and will probably not invest at anything near a reasonable rate, what this industry will require.

Senator HRUSKA. The next witness, Mr. Gary, says in his prepared statement that it is estimated by the Chase Manhattan Bank, that on a worldwide basis, the industry would need $750 billion, from 1970 to 1985, for capital and exploration expenditures.

There are other financial requirements and working capital additions which make that total about $1¼ trillion.

Currently, it is expected, under our present economic structure and the structure of the petroleum industry, that that money will come from two sources. One is the earnings of the industry, all segments

of it, and profitably so, and the other is by borrowing more money or selling more stock.

Is it generally considered that, even without a meddling and an attempt to dismantle the structure we now have, that it is going to be some chore and it is going to be a burdensome task to achieve that type of new capital, which reaches the tremendous sums that we contemplate?

In his prepared statement, for example, Mr. Gary cites Secretary of the Treasury Simon, who estimated the need for investment outlays in the decade ahead of from \$4 to \$4½ trillion, \$1 trillion of which would be needed through 1985 to explore and develop additional reserves, build refineries and so on.

Is it reasonable that, with the potential—and, in fact, we don't have to say potential—with the realistic outlook for 10 to 20 years of litigation, before the validity and before the workability and before the real meaning and thrust of this statute is to be achieved, is it realistic to believe that this money will be forthcoming for the purposes mentioned?

Mr. BATOR. Speaking for myself, I don't believe so, sir. I cannot believe that people will invest that kind of money in entities where they have no idea whether that entity will become four entities or three entities or of what size.

You will know nothing of what 5 or 10 or 15 years down the road, the entity you loaned money to will look like. And I cannot believe that somebody in a rational way is going to be willing to lend money on that basis.

Senator HRUSKA. And there is no law that we know of that can compel them to lend money to those corporations for that purpose; is there?

Mr. BATOR. Not yet, sir.

Senator HRUSKA. Not yet. The only way we can do it is to take more money from them by the citizenry at large in the form of taxes and appropriate Treasury money for that purpose.

Mr. BATOR. Yes, sir.

Senator HRUSKA. That would lead to nationalization of the whole system, wouldn't it? That would be the eventual outcome.

Mr. BATOR. Very probably, I think, sir. In the end, if the Federal Government finances this whole thing, they are going to control it and run it.

Senator HRUSKA. There is a great deal of testimony on the record, and some contained in your testimony and in other witnesses', about the vast sums that are now devoted to exploration and production.

Insofar as those sums are met by earnings of the petroleum industry, of course, it comes from earnings of all four segments of the petroleum industry, the production, refining, distribution, marketing and so on, transportation.

Mr. BATOR. Yes, sir.

Senator HRUSKA. Under the bill, will that resource be available for the purpose of exploration or will the potential source of that type of fund be limited only to producers themselves?

What do you contemplate in that regard?

Mr. BATOR. As I understand the bill, sir, once divestiture has been accomplished, the production end would have to stand on its

own. And its source of funds for exploration would, very clearly, be limited to its own earnings and to its own borrowings, and, of course, would not benefit from earnings from or the borrowings of the other, by then separated entities: Refining, marketing, transportation. So it would have to sit on its own bottom, if I can put it that way, sir.

Senator HRUSKA. For any of the other sectors or segments of the industry to lend money and take either mortgages or debentures or some other form of security, would that type of taking security be considered an indirect control within the terms of the bill?

Mr. BATOR. It could well be, sir. That's one of the——

Senator HRUSKA. That's one of the prohibitions?

Mr. BATOR. One of the prohibitions of the bill is that it would forbid such loans, as we read it—and you've got to remember this is a criminal statute, and, when people are deciding what to do or what not to do, they have to keep in mind that, if they are wrong, it's jail. So they are not going to be too aggressive about this.

I think the companies are going to interpret those control provisions to forbid any kind of long-term contractual interrelationship between the fragmented segments.

And the place where this is, I think, Senator, going to hit the hardest is in the pipeline side, where, as you know, and again Mr. Gary's testimony points out, crude oil pipelines have consistently been financed on the basis of the general credit of the oil companies. And that is not going to be permitted under this legislation.

Senator HRUSKA. Is it reasonable to expect that the profits, the earnings of the production segment, will be sufficiently large to make a comparable investment in exploration and development, in the same range and in the same figures as is now contemplated by the petroleum industry as a whole?

Mr. BATOR. Senator, I think, maybe, as a lawyer, I'd better say I am not very expert in that, and I don't think I could really say. But, again, I think Mr. Gary would be able to speak to that with more expertise than I can.

Senator HRUSKA. We shall ask him the same question.

Maybe, in the meantime, he can be preparing a little extemporaneous speech on this.

You have here, violation of covenants as one of the consequences of the enactment of this bill, S. 2387. And there are a great number of violations that you list in your prepared statement.

Has any consideration been given to the constitutionality of a piece of legislation that would move into the filed of existing contracts and say, "These contracts we're going to thrust aside, now, and all are with them as a congress."? We say, "There are rights, of course, possessed by some, and responsibilities by others, but we're going to thrust that to the side, and we're going to say we will bury the terms of this contract, and we will take action," which, very likely, will depreciate the value and actually, perhaps, make it impossible for the creditors to enforce their present contracts.

Now, then, we have the constitutional provision, of course, of impairment of contracts. Is that limited only to impairment of contracts by States or does that apply to Federal legislative authority, as well?

Mr. BATOR. I should start, Senator, by saying that I, myself, am not really expert in any sense in constitutional law, and, therefore, I wouldn't really want to speculate on how the Supreme Court would come out when the basic constitutionality of this statute is tested.

One thing we can be sure of is that it is going to be tested.

I can comment, I think, in saying the power of Congress, under the commerce clause, is enormously broad, no question about it, as shown by the Supreme Court cases upholding the validity of the Holding Company Act legislation.

Congress has never tried to do anything like this before, and how the Supreme Court will come out on it, sir, I cannot really be very expert in guessing at.

What I am clear on is two things: The constitutional litigation surrounding this legislation will be there; it will be active; and it will be fierce; and it will take time. Second, there are very clearly aspects of this legislation which I think, even as an amateur in constitutional law, I would consider to present very severe constitutional problems. Let me give you two examples.

This bill makes it a criminal violation to own prohibited assets after 3 years. Now, as my testimony has tried to indicate, there is no practical way on Earth that, by the end of 3 years, a major oil company is going to be able to be in compliance with this law; no practical way, given all the good will on Earth. With a criminal statute, then, to say, "You've violated the law and you're a criminal," I think that presents procedural due process problems of a very severe magnitude.

Let me give you another example, sir, if I might take a little of your time.

There is no provision in this bill that really says how long it operates. It says that, if, in any year, 1974 or after, you have a certain amount of production, refining, or marketing, you are a major producer refiner, or marketer, as defined, and you cannot own the other kinds of assets.

Assume a company, 5 years after this bill is adopted, in 1980, makes a successful find. And it's done well, it's explored well, it's spent a lot of money, and suddenly, in that year, its production exceeds 100,000 barrels a day, which I think is the dividing line.

Well, on January 1 of the next year, if it still owns marketing assets and if it still owns transportation assets and if it still owns refining assets, it's a criminal. I do not think that will stand up constitutionally.

Senator HRUSKA. Well, what constitutional grounds involved would be taking of property without proper and just remuneration?

Mr. BATOR. That would be an element of the constitutional challenge, sir.

Senator HRUSKA. And I will respect your disavowal in your idea that you are a constitutional lawyer. I do not want to press you on the point.

I raise the question because it is going to have to be met. There is such a thing as being unconstitutional in taking property without just remuneration.

Now, here are people possessed of certain covenants which gives them the rights of property and the earnings and the income of a going business. And the Government comes along and takes away that property right as a unit, and says, "We're going to break this up."

There will be, no longer, the certainty that your economists and that your financial experts have adjudged to be the fact and the prospect. No longer will you be able to be possessed of the right to assert your claim for collection against a going industry, which can project and has projected earnings and a current income of a given quantity source to be able to discharge those covenants and comply with them.

You are going to have to take something else. And it will be of doubtful value, on a relative basis, to what is being taken away from them.

Now, the question that it poses: Is that, the taking of property without just remuneration, to a point that it will not be able to satisfy constitutional requirements?

Mr. BATOR. That, sir, is certainly one of the issues which will be, I'm confident, presented to the courts and, eventually, to the Supreme Court on the constitutional questions: Taking without due process, procedural due process. Many other lines of argument will be used; no question about it.

I might, Senator, comment that, as this bill is drafted—I suspect this is not intentional—but, as this bill is drafted, what it says—and this is covered in my prepared testimony—if an oil company is a major in any two of these fields, say, producing and refining, under this bill as drafted, the company has to get out of the oil business completely, but completely; it can't stay in one segment or the other.

Now, as I say, I don't know whether that's intentional or not. But I think if Congress passes a bill that says to Exxon or Texaco or Mobile or any of these companies which are majors in more than one segment: "You get out of the oil industry completely"—there, again, as a constitutional amateur, I don't have much doubt as to what the reaction of the Supreme Court would be.

Senator HRUSKA. Argument will be made that there has been a history of divestitures. It would go back, I presume in the petroleum field, it would go back to 1911, wouldn't it, the *Standard Oil* case?

Mr. BATOR. Yes, sir.

Senator HRUSKA. And, then, we have the Holding Company Act of 1935. And, then, more recently, the decree in *Loew's* case, which is a form of divestiture.

Are you familiar with the history and the continuity of the 1911 *Standard Oil* case enough for me to give you some questions on the subject?

Mr. BATOR. I've done a little study of it in preparation for these hearings, sir, and I will try to answer your questions. I am certainly not a student of that particular era, but I have studied it a little, as I say, in preparation.

Senator HRUSKA. Well, needless to say, whatever study you made, I am sure, was pretty thorough. And any question that I will ask you will be harmless, and I am sure you can answer it.

Mr. BATOR. Thank you, Senator.

Senator HRUSKA. Well, let me ask you this. Isn't it true that, in the *Standard Oil* case, there was the situation where the Standard Oil Co. had a series of companies engaged in pretty much of an operation of a vertical structure in each instance, except, perhaps, one, which I will mention later, each of those companies had vertical structure, and

they engaged in exploration and production and in refining and in marketing and in transportation; and those companies were geographically situated so that the situation is entirely different from that which we now contemplate?

For example, there was Standard Oil of New Jersey, Standard Oil of Ohio, Standard Oil of Indiana, Standard Oil of California, Standard Oil of whatever they were. I don't know how many there were; it doesn't make any difference, with the exception, perhaps, of Kentucky where the Standard Oil of Kentucky, as I understand it, as I have been informed, that company had only distribution and didn't have any of these other aspects.

So the task was fairly simple, wasn't it? It wasn't simple, but, on a relative basis, it was simple because each of these companies had a corporate structure; they had stocks; they had stockholders; they had assets; they had operation budgets; they had their contracts; and they stood on their own.

And the divestiture of 1911 simply said, "You cannot function as a unit anymore. You have to spin them off." And that was done with relative ease.

In fact, one of the explanations or one of the figures of speech is maybe too simplistic, but one of the explanations of this situation was that it could resemble a situation where there are, in existence, say, 30 or 35 separate automobiles, which were owned and controlled by common owners, but they had a subownership, in each instance, of the 30 automobiles involved. Came the offer for spinoffs, and they spun off the different automobiles to different owners, different corporate entities.

In the case before us in S. 2387, isn't this a distinguishing difference that we are not dispersing ownership in an automobile; we are engaged in an exercise of disassembling an automobile; the wheels will go one place, the engine will go another, the chassis another and so on?

And that's a different animal, isn't it? On that rather simplistic explanation, could you say whether there is some soundness to it; does it make commonsense?

Mr. Bator. I think your explanation is admirable, Senator. I think it is absolutely factual. You did, in 1911, have existing, with the one exception you named, integrated structures, the stock of which companies was owned by the top holding company.

And the court order in 1911 said, "You have to spin-off the stock in these operating entities to your own shareholders."

It was a divestiture of operating entities on a geographic basis, but not carving up the operating entities themselves. And this is, as you point out, the significant difference.

Perhaps, I could add a couple of more points. First, I should say the *Standard Oil* case was 65 years ago. It was, if not in the infancy, certainly in the adolescence of the oil industry. The industry was far smaller, it was far simpler. There were no foreign entanglements, I believe, of any kind at that time, and you were operating with one company or one system, if you will, rather than the 20 companies we are dealing with here.

Finally, and interestingly, as I say, I have done a little bit of study on this; the top company did not have any partcular contractual entanglements of its own.

For example, I believe it did not have any outstanding indebtedness. It acted as a manager for these operating entities, so that it could get rid of the stock of the subsidiary companies without breaching contracts.

It seems to me to use the 1911 Standard Oil divestiture as a precedent for the kind of program that is being proposed here just cannot stand up. It is no precedent at all.

Senator HRUSKA. On what order and in what range were the total assets of the Standard Oil Co. in 1911, before the spin-off, have you any idea? There is some place in the testimony identified with this rate.

Mr. Gary, may we ask you to interpolate here? Have you any figures on that?

Mr. GARY. No. I don't have any figures on that. I think it was in in the neighborhood of $200 million or something like that.

Mr. BATOR. I think, Ray, it was more than that; compared to the $146 billion that we're talking about today, it was insignificant in size.

It wasn't a small company, but—I think, Senator, I had better say I don't really know the answer. We can supply that, of course. But my guess would be, roughly, maybe $1 to $2 billion.

Senator HRUSKA. There is another factor that was absent in 1911 and that is the international and the global ownership and operation of many of these corporations.

Was that present in 1911?

Mr. BATOR. No, sir; it wasn't. I believe the industry was completely domestic at that time.

Senator HRUSKA. Does it mess things up now that some of these companies are engaged in global operations and ownerships and also contracts and so on?

Mr. BATOR. It makes any kind of divestiture infinitely more difficult and complicated. And, in fact, as my testimony points out, I don't think, in many respects, that foreign courts and foreign creditors and foreign third parties are going to be bound by what the Congress or the Federal Trade Commission does. And I think this is going to end up in the most hopeless kind of tangle you can imagine.

If you'd like, sir, it will be a lawyer's field day.

Senator HRUSKA. All right. Turning our attention to the Holding Company Act of 1935, there is an analogy, isn't there, between that situation and the 1911 *Standard Oil* case, inasmuch as there were a number of companies, electric generating and distributing companies, that were involved, but each of them were sort of in a given geographical location; had its own corporate entity and had its structure and had its assets and its profit and loss statements and was under the jurisdiction of State regulation, as well?

So it was a relatively easy matter there to simply take the Missouri company or the Nebraska company or the Illinois company or the

Ohio company and say, "All right, now, you stockholders, you are in charge, on your own." And they were able to keep on operating, and there was never any interim of difficulty, chaos or confusion or immobility.

Mr. BATOR. That's absolutely accurate.

Senator HRUSKA. And, then, you tell us in your statement that there will face the country, the petroleum industry, and all others; that confusion, chaos, perhaps immobility, if this bill becomes law.

Have you any comment on that comparison, on those feeble efforts on my part to create a little something for thought and expression?

Mr. BATOR. They are not feeble at all, Senator. I think you have put it very accurately.

The crucial difference, as you say, between this and the public utility holding company divestiture is that that divestiture program never touched the operating entities.

The Brockton Power & Light Co., or, as you say, the Nebraska Power & Light Co., was an operating entity, with a management. The legislation didn't touch it.

The only thing that had to be divested or rearranged in the utility holding company reorganizations was the holding company superstructure. But it never touched the operating companies.

And, yet, it took the big holding company cases, *Electric Bond and Share, Associated Gas and Electric,* they started in 1935. They were being wound down in 1955–58. In other words, it took really 15 to 20 years to do even that, and a far simpler matter it was than the thing you are facing here.

Senator HRUSKA. While it took a lot of time and took a lot of patience and persistent effort, the results obtained were fairly satisfactory with the intended course of that legislation; wasn't it?

Mr. BATOR. I think that is fair to say, yes, sir.

Senator HRUSKA. It is fair to say. And the industry and the Nation and the economy have adjusted themselves to that new order of things.

Mr. BATOR. Yes, sir.

Senator HRUSKA. Sometimes the *Loew's Theater* case is cited as a spin-off, but not for very long. As you pointed out in your statement, the assets totaled $218 million with a debt of some $30 million, held by a few insurance companies.

Mr. BATOR. Yes, sir.

Senator HRUSKA. And the court said, "You take care of this within 2 years or else." And you pointed out 7 years was necessary in order to accomplish that divestiture, a very simple countryside operation.

Why, in terms of the petroleum industry of today, $218 million would hardly be worth the stoop over and pick up from the floor, as it was written in a political paper. And, it was easy, wasn't it?

Mr. BATOR. I worked on that Loew's thing myself, sir, and the 7 years were not easy. It took a lot of pushing and shoving.

Senator HRUSKA. But in contemplation of the Herculean task of dealing with S. 2387, in the form of a statute, how would you compare the two situations?

Mr. BATOR. Well, sort of like the flea and the elephant, sir, I guess.

I might comment on the Loew's thing because it is an interesting example of why these things take so long. As you say, there was $30 million of debt to be divided, held by a handful of insurance

companies, so you could talk face-to-face with the people you were negotiating with. It wasn't the management of the company that wanted the delays; it was dying to get this thing over. They had lost the case. They wanted it finished. They wanted to be about their business. But, between the interests of the theater company, the production company, the holders of the debt, and the Government, arguing about how this should be settled, with all the good will on Earth, it took 7 years to do it.

Senator HRUSKA. That was an instance, however, of an integrated company, wasn't it; that is, a company with a vertical structure, with production and distribution, in fact, even the exhibitor?

Mr. BATOR. That is correct, sir.

Senator HRUSKA. It was all wrapped up in one company, and they had to spinoff?

Mr. BATOR. Yes, sir.

Senator HRUSKA. During the course of your statement, you have commented upon the fact that the proposed bill, S. 2387, is a criminal statute, and it prohibits certain long-term or substantial contracts. But it doesn't define what those are. Isn't one of the requirements of the criminal statute, that it must be sufficiently definitive so that a man knows when he is commiting a crime and when he is not? Isn't that one of the cardinal principles of the necessity that there shall not be ambiguity. There must be sufficient definitiveness so that an actor in that arena, an actor on that stage, must know how far he can go and what he can do and what things he cannot do without inviting, or even having it imposed upon him from those sanctions?

Do you believe that S. 2387, in this particular, would satisfy the constitutionality of a criminal statute and the ambiguity of it or the definiteness of it?

Mr. BATOR. I have very severe doubts about it, sir.

Senator HRUSKA. Is there any way, in that example you gave of an operating company under the 100,000 barrels a day, and it would come upon the mother lode and find something that would make it a major producer, is there any possible way—I will not say likely way, I do not say probable way, I do not say conceivable way—that they could affect divestiture of their competing interests in time to escape the penalties of the law, as this bill is now drawn, because they will be engaging in activities which are prohibited by that law and with criminal sanctions attached to it? Is there any possible way they could do that?

Mr. BATOR. No, sir, there is not, except they will go to court. And I think my judgment would be that the courts would find the application of the statute to them to be unconstitutional.

Senator HRUSKA. And if they did not find that way, they would find themselves in jail?

Mr. BATOR. Yes, sir.

Senator HRUSKA. That is a pretty hard remedy, isn't it?

Mr. BATOR. I would think so, sir.

Senator HRUSKA. But even if they were possessed of good faith and they wanted to comply with the law, they would not be able to do it, would they?

Mr. BATOR. No, sir.

Senator HRUSKA. The history of the antitrust laws has been, as you pointed out in your principal statement, based upon a case-by-case consideration on the rule of reason.

The structure of the antitrust laws, starting with the Sherman Act, is relatively simple. It is not too long. It is not too lengthy. It is not too detailed.

The rule of reason—the Supreme Court, all the other courts, have had to apply the rule of reason, and there is only one way that can be done, and that is on the basis of a case-by-case consideration and determination, in the hope that, somewhere along the line, a pattern will emerge which will give those people in business some rough idea, some approximate idea, of what is legal and what is not. And, even then, they are not sure, particularly in view of such laws as the Robinson-Patman Act, on one hand, and the antitrust laws, on the other, and so on.

Is there any apprehension on your part that an abandonment of that type of approach, in favor of an inflexible law that will say, "This is legal and this is illegal," in an attempt to draw up an encyclopedia? It will have to be an encyclopedia statute or the regulations of the statute, as S. 2387 is drawn. It would have to be encyclopedic in size and in nature.

Does that raise any apprehensions in your heart as a lawyer, as a man who has worked in this field?

Mr. BATOR. It does, sir. One of the glories of our system, I think, although there are those who criticize it because it also moves slowly and carefully and what have you, is a case-by-case approach, where, through the giving of expert testimony, the crucible of cross-examination, a court has a flexibility, both in terms of making findings as to anticompetitive effects and as to the appropriateness of the remedy, which gives it a flexibility to adapt to a particular situation.

What this bill does is use a sort of a meat ax approach. It says, "We are not really going to look to see how this really works. We will just take an ax and chop them into four."

Senator HRUSKA. What is, under bill S. 2387, a long-term contract?

Mr. BATOR. I do not know, Senator. In the financial area, the difference between long-term and short-term debt is usually considered to be anything over 1 year. But I would certainly advise a client, under that criminal statute, that, if he wants to enter into an agreement of over a year with anybody, he is taking severe risks of violation of a criminal statute.

But it is undefined. I cannot tell you what it is.

Senator HRUSKA. Well, in another field, we considered, in the Congress here, at one time, some 10 years ago, the sale of wheat to Russia.

And the statute, at that time, said that long-term credit should not be extended in such sales for that particular type of sale.

I believe that the result was headed by an Attorney General's opinion. Robert Kennedy, at that time, was our Attorney General, if I am not mistaken. And I will stand corrected. But, at any rate, the rule was laid down that anything over 5 years would be long term and anything up to 5 years would be on line.

Now, let us assume that, instead of the 1 year that you suggested, let us assume that up to 5 years would be acceptable and would not be considered long term, but anything over and above that would.

Is it practicable for a refinery, for example, to be financed, structured, and put in operation upon the basis of a 5-year contract or a series of 5-year contracts by the refinery corporation officers, with whomsoever they can find?

Is it considered practicable from the standpoint of a tracking investment and of making that refinery pay and have a reasonable chance of staying in operation on the basis of a series of 5-year contracts?

Mr. BATOR. Again, that is more in Mr. Gary's area than mine, but I cannot believe that a prospective lender is going to be given much assurance by a contract that has a far shorter life—5 years, as you say—than the period of time over which, quite obviously, an investment of the size of a modern refinery would have to be financed and the debt related thereto paid off, which would run 20 years, perhaps.

Senator HRUSKA. In what?

Mr. BATOR. The terms of the credit, I take it, would normally run 20 to 25 years. If I am lending you money for 25 years to build a refinery and I have no contractual assurances after the first 5 years, I am not going to feel very confortable about lending that money. I do not know whether I would or not.

Senator HRUSKA. The situation is even more grave and more serious, is it not, when we consider it in terms of pipelines, rather than refineries?

Mr. BATOR. I would have thought so, yes, sir. I think the pipelines present a particularly difficult problem under this legislation.

Again, Mr. Gary will give you far more detail on that. But I find it difficult to believe that major pipeline projects will be financeable on terms satisfactory to creditors or their lawyers under the strictures imposed by S. 2387.

Senator HRUSKA. If this bill would have been law 2 years ago, would the Trans-Alaska pipeline be possible? Where would the $7 billion come from to build that line, if a resort was not added to the petroleum industry market for that purpose?

Mr. BATOR. Again, that is Mr. Gary's area, but the contracts, the loans under which that pipeline was financed specifically prohibit the exact things that this bill requires these companies to do.

And it is quite clear to me that the creditors who advanced those moneys and their lawyers bargained for good reason for the assurance that those contracts gave them. What they would have said if this law had been in effect and these contracts would have been impossible, I cannot speculate, Senator, how this is going to work. I just cannot foresee how the private sector, the private lending sector, their bankers, their lawyers, what have you, are going to be able to operate under this kind of prohibition against the kinds of contractual relationships which creditors have found it essential to have before they advanced any money.

Senator HRUSKA. I understand, Mr. Gary, you are going to get into the Trans-Alaskan pipeline in your statement?

Mr. GARY. Yes, sir, I am.

Senator HRUSKA. But, Mr. Bator, isn't the oil pipeline from Alaska only a prolog? It is only $7 billion. And it is being struggled with, but there is a reasonable chance of its being a success.

What about the natural gas pipeline that will come to $10 billion and which might not come into being until S. 2387 becomes law?

How will they get that natural gas to market without that pipeline and will it be possible under a law such as that which is contained in the text of S. 2387?

Mr. BATOR. I find it very difficult to believe that it would be possible without Government guarantees or insurance or similar Federal Government support; in other words, the taxpayer.

Senator HRUSKA. There are those who say that it would be harmless because we would simply add $10 billion to our present bonded indebtedness, and it would not be harmful. And we would have ourselves a pipeline that would get people a lot of cheap gas, natural gas, maybe even lower than it now is.

But, in the main, people in America are not quite that ready to accept Government intervention in that field. Do you think so?

Mr. BATOR. No, I do not, sir.

Senator HRUSKA. That will be all the questions I have at this time.

I, now, turn to counsel, Mr. Bangert. Have you some questions, Mr. Bangert?

Mr. BANGERT. Yes, Mr. Chairman. Thank you.

Mr. Bator, I want to compliment you on, obviously, a very thoughtful statement that you put a lot of time and effort into.

In your introduction, you indicate that the purpose of your testimony was not to discuss the wisdom of divestiture legislation, but to try to give the subcommittee a lawyer's judgment of how a divestiture program would, in fact, work and to analyze some of the legal difficulties and problems which would arise if a bill such as S. 2387 were adopted.

And we appreciate very much your background and the thought that you have put into analyzing the various problems that might occur under this bill.

I note that your practice has largely been in the area of corporate financial work. So, obviously, I would assume you do have a vat of information upon which you based your statement. In that regard, I do note that you see many problems with the drafting of the legislation with the difficulties that it could entail. On behalf of the majority staff, I would like to extend to you an invitation to give us a draft of a bill which you feel might solve all the problems that you raised during the course of your testimony.

I think it would be very helpful if you would do that on a pro bono basis. I think that would be even more appreciated.

Mr. BATOR. Would you like me to respond to that, sir?

Mr. BANGERT. Well, I would like for you to accept——

Senator HRUSKA. And comply. [Laughter.]

Mr. BATOR. I think I had better say I will take that up with my partners, sir.

Mr. BANGERT. In your statement, you indicate that one of the problems that we better face up to right now is the fact that passing this bill will not overnight cause the petroleum industry to be divested.

You indicated it will take, in your opinion, a minimum of 10 years of hard-fought litigation. And you seem to favor letting the Federal Trade Commission continue with their action, and letting them resolve the problem that the staff also sees in terms of the structure of the petroleum industry. That case has been underway 2½ years, and they

have not gotten a trial yet. And, as you know, the *IBM* case, which is another major structural case, was filed in January of 1961——

Mr. MEASDAY. 1969.

Mr. BANGERT. I'm sorry, 1969. They started trial in May of 1975. And even Loews', which you indicated was a gnat as compared to an elephant, in the oil industry, took 7 years.

Certainly, litigation of major antitrust cases also are time consuming. We are not going to get any relief overnight, regardless of which way we go, is that correct?

Mr. BATOR. I think that is absolutely fair; yes, sir.

Mr. BANGERT. I would like very much to just explore your thoughts further on the pipelines. You indicate in your prepared statement that the bill would prohibit the continued existence of various contracts between oil companies and their pipeline subsidiaries, which constitute the security for outstanding indebtedness.

And, then, you go on to talk about the throughput agreements that the parents of the pipeline subsidiaries have supplied to the subsidiaries.

Could you elaborate a little more on your theory that such throughput agreements would, I would guess, have to become null and void and could not be continued in any manner?

Mr. BATOR. Yes, sir. Perhaps I can make my point most clearly by using, again, a specific example. And, because we have had such discussions of it, I guess the Trans-Alaska is a good example.

A throughput agreement is an agreement by a parent oil company, which promises the pipeline subsidiary that the parent will ship a sufficient amount of oil through that pipeline, or in lieu thereof, to advance moneys to the pipeline company to permit the pipeline subsidiary to pay and to honor all of its debts and liabilities; not just its indebtedness, but its taxes, its payroll and so on. I think it could be considered as an indirect form of guarantee.

And when the pipeline subsidiary goes to borrow money with which to build the pipeline, that contract is assigned as security to a trustee, as security for the indebtedness of the pipeline company. And, therefore, that throughput has become indirectly a guarantee of the pipeline company's indebtedness.

You take that contractual position and you look at the definition of control in this bill. What we are positing here, of course, is a requirement, if you will, that there be no relationship of any substantial nature between a producing company, which is a parent, and a pipeline, and that a prohibited relationship is defined to include control. In other words, the producing company, the parent company, cannot control prohibited assets, including pipeline assets.

Control is defined to include "direct or indirect legal or beneficial interest in or legal power or influence over another person, directly or indirectly arising through"—and I have skipped some words—"substantial or long-term contractual relations, loans, agency agreements or leasing arrangements."

I do not think you could find a contractual relationship such as that represented by a throughput agreement, which, of course, runs 20 to 25 years, as long as the indebtedness of the pipeline company, which falls more clearly within this definition.

In other words, as we read this bill, it would prohibit one of the companies affected by this bill on the producing side from honoring any longer its commitment under the throughput agreement to the pipeline.

Mr. BANGERT. Would an agreement to ship certain products through the pipeline, in and of itself, fall within the control definition, you believe?

Mr. BATOR. A short-term agreement, I take it, probably would not. I think an agreement that ran for 15 or 20 years or 25 years to ship product would. And, of course, to put the other side to that, which is the one the creditors really look to, where you can not ship product for any reason whatsoever, you will put up money to satisfy the pipeline company's liabilities and obligations.

I think a long-term contractual agreement like that would—dealing, again, remember, with a criminal statute—in my opinion, clearly fall within this definition of control.

Mr. BANGERT. Well, it is the agreement to ship product. I take it that that does not bother you as much as the agreement to put up money in case product is not shipped, is that correct?

Mr. BATOR. I think it is fair to say that even a simple agreement to ship product, when it got into the long-term side, when you are dealing with a criminal statute, I think it would present very severe problems to a company, whether it would be willing to take the risk of doing it and very severe problems for the creditor, whether he could look with any assurance to that contract because who is to say whether, 2, 3, 4 years later, a court is going to say, "No, that is within definition of control, and it is illegal."

I should say, Mr. Bangert, that this definition of control is so broad and so vague and so uncertain that I find it difficult to believe that any kind of longer term contractual relationship between segments of the broken-up oil industry can survive—whether the companies would really have the guts, with a criminal statute, to do anything in the way of cross-contractual relationships, particularly when they look at the record of the testimony before this committee, where one of the bases given by proponents of the legislation for the need for it is the existence of these contractual relationships.

Mr. BANGERT. Senator Hruska has a question.

Senator HRUSKA. I thank you, Mr. Bangert, for yielding at this point because the questions on the subject I would raise bear on pipelines. And I think the discourse upon that topic should be in one place in the daily record.

Mr. Bator, are the pipelines any problem? Are there any problems under the present system of pipelines? Is it true that there is a joint ownership, in most instances, by the larger companies. But is it not also true that they are common carriers subject to regulations that pertain to and govern common carriers, with the exception, perhaps, of the pipeline in California that does not go beyond the borders of California?

And there have been no complaints, according to testimony before this subcommittee only 2 or 3 short years ago, in which we went into the pipeline problem at great length. There have been no complaints that anybody was denied access to the pipelines. They all had access

to it, just like they have access to railroad cars on railroad trains or on the transport of air freight by airlines.

Are there any problems, really, in the present structure? What is offensive about it? What drag on competition is there? What objection is there to pipelines existing under the present structure? Can you tell us?

Mr. BATOR. I know of none, although having read the testimony here, there was a gentleman, I believe, from California, who had some complaints about access. I do not know any details.

Senator HRUSKA. Not the use of pipelines that are in existence, but the building of additional pipelines to give access to the truck line. Wasn't that his problem?

Mr. BATOR. I believe so, sir, yes. But certainly an interstate pipeline is a common carrier, has been since, I guess, 1906.

I believe it must, by law, accept shipments from anyone who proffers them. Its rates are set by the Interstate Commerce Commission. Its tariffs and rates are set by governmental action. And it must charge that tariff equally to all shippers.

And, in addition, these pipeline companies, under a consent decree that, again, goes back many decades, are limited in the amount of dividends they are permitted to return to their oil company parents. I believe it is 7 percent return on the pipeline investment. And this consent decree, again, serves to equalize the opportunity for both owner and nonowner to ship.

Senator HRUSKA. So that there is no question of obscene profits at the hands of pipelines. It is 7 percent of the valuation; that's the profit that they can take from it?

Mr. BATOR. That is correct.

Senator HRUSKA. There is not a question of obscene profits.

Our testimony before this subcommittee also shows that the rates per unit of petroleum products increased over the past 25 or 30 years infinitesimally. Notwithstanding the heavy advance of inflation and notwithstanding the heavy advance in the price of the product, the rates charged per unit of petroleum product raised very, very slightly.

In view of that fact, if this were converted into a bill under S. 2387, what possible advantage could occur or accrue to a new arrangement, as opposed to an arrangement that is behaving and conducting itself admirably?

Mr. BATOR. Speaking as a citizen, sir, I see none.

Senator HRUSKA. Would there be an interference, under S. 2387, if it were enacted into law? Would that abolish the common carrier status of these pipeline companies?

Mr. BATOR. I would not think so, no, sir.

Senator HRUSKA. I would think not. I would not think that there would be flagragation to that degree. It would not be countenanced by the introducers of the bill.

So the question is—and I shall raise the same question with Mr. Gary—what is there is the pipeline situation that furnishes any necessity for even considering a change in the present arrangement? I would like to know. I would like to have some answer to that question. Have you a comment?

Mr. BATOR. It is just that, again, this is really more for the bankers and the economists, I think, than the lawyers. But certainly, from a

legal point of view, I share your view. I do not see any major problems in the present structure.

Senator HRUSKA. We examined these witnesses pretty carefully and exhaustingly. They were able to point to it with no complaints of anyone being refused access to pipelines when they had a product to transport.

Thank you, Mr. Bangert, for yielding at this point.

Mr. BANGERT. With the Chairman's permission, perhaps we can, at least, make reference, at this point in the record, to those hearings that were held on pipelines by this subcommittee, as well as hearings on the other side of the Capitol.

There may be, at least, some disagreement with respect to what the witnesses indicated at that time. So, with your permission——

Senator HRUSKA. That would be most welcome. After all, these hearings are a search for the truth, and they have been conducted that way.

We want unadulterated undulated truth. And if any grain or two of truth can be found in the hearings on the other side of the Capitol, we want that. [Laughter.]

Mr. BANGERT. Mr. Bator, do you believe that any divestiture scheme, either by litigation or by legislation, can be devised which will overcome the problems that you have talked about in your paper today, if we are talking about the top 8 or the top 16 companies and not a single company?

Mr. BATOR. I think that the premise of the question deserves a comment, because the whole thrust of litigation is a case-by-case approach. You have the current FTC proceeding, which I think you referred to, and which commenced in 1973. I believe there are eight defendants in that case.

As you say, it has been going for 2 or 3 years; and, I guess, reasonable men would contemplate that it is not going to be swift. If they go forward with it, it is going to take some time, still, before a final resolution is arrived at. I'm certainly not going to speculate on what kind of decree will be imposed if the FTC should find in the end that there have been anticompetitive effects in this industry, in the area they are going at; which, by the way, is not this kind of blunderbuss approach.

I believe the FTC complaint is largely in the refining area and, I believe, in two or three discreet geographical areas. I believe I'm right in saying that. Down the road, what kind of decree would be fashioned, I cannot speculate on.

Certainly, if the FTC's ultimate resolution of that case is an order requiring the kind of divestiture required by S. 2387, the consequences that would flow from that would not, quite clearly, be dissimilar from the consequences that would flow from this legislation.

But the crucial point, it seems to me, is, first, that in an adjudicatory procedure such as that which proceeds before the FTC or a court, the court or the FTC has the opportunity, as it goes through the record and tries the case, of tailoring the remedy; it is within its discretion. It isn't bound to come out where this legislation starts.

If they then, in their wisdom, say to a major oil company, "You have to carve up into four pieces," and if that finding is on appeal approved by a court, well, then, yes, a company will have to go through this same procedure.

Mr. BANGERT. But I guess you question whether or not that kind of a remedy will ever be devised? Is that right?

Mr. BATOR. From everything that I know of it, sir, I have very grave doubt whether this kind of remedy is appropriate for the ills that even the most critical of the critics perceive in this industry.

And, needless to say, I do not generally share their views as to the ills they perceive.

Mr. BANGERT. Then you clearly think that the remedy, in and of itself, is not the proper remedy, that divestiture and manner of the Senate bill does not develop the remedy to cure whatever evils there may be in the petroleum industry. Is that it?

Mr. BATOR. That, sir, I can only give you as my personal, layman's view, because I'm not an economist and I'm not a banker, and my testimony really wasn't directed to that. But if you want my own personal judgment, yes, I agree with you; I do not think that this kind of massive divestiture is an appropriate solution for whatever problems may exist.

But the thrust of my testimony is, aside from the wisdom of it, don't for a minute think that you are going to do it quickly or easily.

Mr. BANGERT. Are we in a position where the structure of the industry is such that you feel any meaningful restructure would cause so much damage to the industry, the financial community, foreign relations, that we cannot even contemplate that kind of restructure?

Mr. BATOR. I have a little difficulty in responding to that, because of your phrase, "meaningful restructure."

I take it you mean restructuring, generally, of the character and kind that Senator Bayh's bill or Senator Tunney's bill requires.

Mr. BANGERT. Yes, sir.

Mr. BATOR. Yes, I do very severely question whether that form of remedy is going to, first of all, accomplish what the proponents think it is going to accomplish; and secondly, in a shorthand phrase, whether the game is worth the candle; whether the damage you cause is not going to far outweigh the perceived ills which you are trying to cure.

Mr. BANGERT. Well, I must say I am reminded of Dean Burch's statement that A. T. & T. was too big to regulate; and now, I guess, the petroleum industry is also too big to divest, in terms of its consequences?

Mr. BATOR. I will comment only on the first half of that, sir. I believe A. T. & T. is very effectively regulated, indeed.

Mr. BANGERT. Thank you, Mr. Chairman.

Senator HRUSKA. Mr. Bator, when a change is advocated, such as that which is embraced in the proposed bill, upon whom does the burden fall to establish that the benefits gained under that law will outweigh the disadvantages of it and that the benefits, if any, under the law are going to be greater and more welcomed and more attractive than the benefits we are now reaping, as a people and as a Nation, under the present system? Upon whom does that burden fall?

Mr. BATOR. As a lawyer, Senator, I would have to answer that in that kind of a case, and particularly where you are dealing with as radical a departure from what has been our traditional way of dealing with these things, the burden must fall on the proponent;

and a very heavy burden of proof, indeed, it would seem to me, would fall on the proponent.

Senator HRUSKA. It was suggested that A. T. & T. maybe, is considered by some, maybe including some of my colleagues, as too big to regulate. In conversation and testimony of the A. T. & T. representatives, I have not discovered that they are not regulated, and that they are not regulated a lot. Have you any thoughts on that?

Mr. BATOR. I think, sir, if you got them over a drink, they would probably say they feel rather overregulated.

Senator HRUSKA. Well, that is a common complaint these days in all kinds of governmental efforts, but one thing we can say about A. T. & T.—anyone who wants to venture beyond the confines of the 50 States and who will be able to come back and say that they have found a better telephonic system in distant lines than exists in this line, would be a rarity, indeed.

Is that a thought worth considering?

Mr. BATOR. I believe it is, sir—better or cheaper.

Senator HRUSKA. And that includes the costs, the tolls that are charged for the use of the telephones, as well as the cost for the services.

Mr. BATOR. Yes, sir.

Senator HRUSKA. Of course, we have had hearings on that subject also.

You have been invited to submit a revised bill that would meet your objections and still be able to be called a bill for divestiture.

Is there a possibility—and again I use that word "invite," knowing its full meaning—of drawing a revised bill which would split up the four principal segments of the petroleum industry and still vest in that segment which will be in charge of production, exploration, and production, enough capital to meet the requirements and the demands of the future in that field, with all the prohibitions in the bill?

Mr. BATOR. I do not think you could do that, sir, if you started with the premises that are in this bill and similar legislation, no. In fairness, I should not hold myself out as a competent legislative draftsman; I am not. I have done very little of it. There are certainly things in this bill that I might modestly say could be made somewhat clearer and would solve some of the more technical problems that I have raised, but I do not see a drafting solution to the major problems with the bill, sir, no.

Senator HRUSKA. Well, if the assets of the rest of the petroleum industry—that is, their current income or their profits—could not be invested in exploration and production, and in the improvement of the technology thereof—if that is to remain, what would be the source? What revision of the bill, other than eliminating those prohibitions, would possibly be conceived that would give them enough capital to do the job, either from borrowing or from their own resources?

Mr. BATOR. I do not see any. The whole concept of the divestiture is to separate the production and the other parts from each other; so that it is a contradiction in terms to envisage the separated parts supporting each other. The two do not fit together, as you say, Senator.

Senator HRUSKA. On a facetious note, one of the staff members here suggested there was one amendment that could be entertained, and that is an amendment that all the text of the bill following the enactment clause will be stricken, and the bill passed as amended.

[Laughter.]

Senator HRUSKA. That was on a facetious note, however; and I hope counsel will accept that in that vein.

Mr. BATOR. Absolutely.

[Laughter.]

Senator HRUSKA. Have you any further questions?

Mr. BANGERT. No, Mr. Chairman.

Senator HRUSKA. Thank you very much for coming, Mr. McGuire and Mr. Bator.

We will now call on the next witness, Mr. Gary.

And, if you wish, you can sit right where you are, Mr. McGuire and Mr. Bator; and maybe you can join in in the colloquy that will follow, with Mr. Gary.

Senator HRUSKA. You may proceed, Mr. Gary; and the entire text of your statement will be printed in the record, following your summarized statement.

STATEMENT OF RAYMOND B. GARY, MORGAN STANLEY & CO., INC., NEW YORK, N.Y.

Mr. GARY. Thank you, Mr. Chairman. I welcome the opportunity to comment on the bill introduced by Senator Bayh, S.2387, which requires dismemberment of the major United States integrated petroleum companies.

I am Raymond Gary, a managing director of Morgan Stanley, an investment banking firm in New York City.

I believe that such legislation would impair the financial strength of the major portion of the U.S. petroleum industry.

It would impede the industry in raising the capital necessary to satisfy the energy requirements of this Nation. Instead of promoting the availability of additional energy from domestic sources, the results of such legislation would be to create an extended period of uncertainty and weakness for domestic oil companies, leading to an even greater dependence on foreign sources of supply.

Let me provide some background on the perspective from which I am speaking.

Morgan Stanley is an international banking firm engaged in the underwriting and placement of securities for corporations and governments.

Since 1935, when we were formed, we have placed in the world's capital markets the equivalent of over $97 billion worth of debt and equity securities. In addition, we are engaged in providing financial advisory services, in connection with long-range financial planning and the construction of large energy projects. We have arranged financing, over the years, for many of the companies that would be affected by S.2387.

I believe it is because we have had such extensive experience in financing for the petroleum industry that the American Petroleum

Institute asked us to consider giving testimony to this committee, from an investment banker's point of view. Over the next decade, the ability to secure funds from investors in the world's capital markets, is going to be vital to the economic future of U.S. industry.

For the first time in modern U.S. financial history, the supply of funds may not grow as fast as the potential demand for capital, and financing considerations may act as effective constraints on the economy's capacity to finance fixed investment over the next decade.

In recent years, investors have become very quality conscious in choosing their investments. In the future, we expect them to become increasingly selective. They will allocate their capital to industries and companies and projects which represent the best investment opportunities. The petroleum industry has been and will continue to be an intensive user of capital. The era of cheap oil is over.

Unfortunately, large discoveries of oil in the United States today are only being found in expensive frontier areas, such as the Arctic and deep offshore waters. If the credit of our U.S.-based oil companies is weakened, they will not be able to attract capital and do the job.

Furthermore, a fragmented industry would have a seriously diminished capability of competing with foreign oil companies, precisely at the time when many foreign nations are strengthening and consolidating their own national oil companies. Prior to the Arab oil embargo of 1973, the petroleum industry enjoyed a high degree of acceptability to investors.

Since that time, world petroleum economics have been importantly affected by actions of the OPEC cartel. A number of factors, arising largely as a result of OPEC actions, including skyrocketing costs, nationalizations, takeovers, increased taxes, government controls on prices—all of these have caused investors to become concerned about the industry's continued investment attractiveness.

The confusion arising from the passage of divestiture legislation would have a disastrous impact. In our view, it could prevent most of the petroleum industry from financing in any significant amounts, over the next decade, except at prohibitive rates. If the supply of capital to the petroleum industry dries up, as we believe it would, there would be only one source left to look to for support in financing our most vital energy industry—it has already been mentioned—the Federal Government and the taxpayer.

In the end, oil company divestiture could well lead to the need for a Federal guarantee program or some kind of Federal insurance to provide the necessary backing for petroleum financing. Now, my prepared testimony is divided into two major sections. I will not take the time to go into details about the future capital needs of the petroleum industry—which is covered in the first section and has also been covered by other witnesses.

Suffice it to say, there are many estimates by competent authorities on capital requirements for the entire economy and for the petroleum industry, in particular. For example, there are estimates that in the next decade the domestic petroleum industry may spend an average of $40 billion a year. This is more than four times the size of average yearly expenditures in the last decade. A study which our firm has

prepared also indicates an emerging capital insufficiency, in which lack of availability of capital will act as a constraint on the amount of productive facilities that will be built.

We conclude, therefore, that maintenance of high credit standing is going to be vital to petroleum companies, because they are going to need to raise more money than they ever have before; and the largest amounts of money are, naturally, available to issuers of the highest credit. In order to illustrate, among other points, how important it is to have a strong credit position, I would like to tell you something about the financing of the trans-Alaskan pipeline system. This is something that I am very familiar with. I was in Alaska on the day that it was first announced that the system would be built, and I have spent most of my business career, since that time, working for one or another of the participants in financing their shares of the system.

As you know, Congress deemed this system to be of strategic importance to the Nation, when it passed the Authorization Act in November 1973. The latest estimated cost of the system is $7 billion, not including contingencies or interest during construction. When to these are added field development costs and the tanker fleet, the grand total is $13 billion, all of which will be spent before 1 penny is returned to the oil companies.

Now, there has been a lot of confusion in this record about pipeline financing; so I would like to start off and digress a moment about why it has had to be done by oil companies in the past. To start off with, pipelines are risky investments. They transport only one commodity, over a fixed direction, over a fixed route, in only one direction. The investment is terribly inflexible; it cannot be easily altered to respond to changing distribution patterns. The owners of the system are exposed to many risks that are completely beyond their controls; and these are changing distribution patterns, proration, Government controls, imports—name them; there are dozens of them.

Because of these risks, most oil pipelines in this country have necessarily been built by the oil interests they serve. No one else has an economic incentive to build a multimillion dollar oil pipeline, nor would a third party assume these risks without some assurance of throughput to cover them. Lenders are acutely aware of these risks; and they have almost inevitably insisted, when financing pipelines, that they have the credit of the appropriate shipper-owner oil company backing the credit of any pipeline borrower.

The credit backing is either direct, in the form of guarantees, or indirect. Almost uniformly, the indirect backing includes unconditional commitments of the shipper-owners to complete the facilities, to operate them, and if operation is interrupted or curtailed, to restore them back to operation. The effect of all this is to require oil companies to put up enough money to cover the outstanding indebtedness of the pipeline and its other liabilities, as well, whether or not it is completed or operates, or is ever restored to service.

These agreements are firm applications of the full credit of the oil company involved. For the purposes of financing, as noted by Mr. Bator, they are, in effect, guarantees of pipeline company's

indebtedness. Whether the credit is direct or indirect, the consequence for the lenders is the same. The risks of failure of the pipeline operation are put upon the oil companies. The consequence for the oil companies is the same whether they own it in undivided joint interest form or in corporate form. They have dedicated parent company resources and credit to get the pipeline financed.

In TAPS, Trans-Alaskan Pipeline System, the risks I have been talking about become prodigious. The most serious of all is the risk that the line might not be completed, for whatever reason. But this is of concern to lenders, for the kinds of reasons they mention all the time, the harsh environment, escalating costs, environmental delays, weather—any other unforeseen problem which endangers completion.

Pipelines are unique in that they are absolutely worthless until the last mile is built. They are quite different from other industrial facilities, in this regard.

Now, I would like to tell a little bit about a specific example, a placement we completed last November, for a joint financing vehicle used by the Standard Oil Co. of Ohio, and the British Petroleum Co. Together these companies own just under 50 percent of the system and their share of the cost is presently estimated to be between $5½ and $6 billion. The principal amount of the private placement was $1¾ billion, the largest ever done in financial history.

There were drawdowns in 1975 with just over $1 billion of bonds, and there are additional closings scheduled through the second quarter of 1977 on a quarterly basis. The issue was sold to 1976 investors, including insurance companies, savings banks, et cetera, and in almost every case, these institutions made commitments far exceeding the amounts they had previously invested in any one issue. It should not surprise you, therefore, for me to tell you that the economics of the project and the credit of the companies were weighed with more care than in the case of any financing I have ever participated in.

The lenders sought to assure themselves, not only that the pipeline system was viable from an economic view no matter what happened, they analyzed the capacity of the guarantors to withstand massive cost overruns or delays in time, and they built into the loan documents very elaborate protections, which gave them the right to intervene whenever trouble was threatened.

And Mr. Bator has named some of the restrictive covenants that are in that loan agreement. I negotiated them and they are tight. And they all had the purpose of tying the oil inextricably to the pipeline so that the ownership of the two could never be separated. There were detailed restrictions put upon Sohio's ability to dispose of oil, and there was a prohibition against either parent selling or assigning the equity of their pipeline subsidiaries. Not only did we have completion and throughputs, we had guarantees as well, in effect, to give the lenders recourse against the project as well as to the going concern credit of the oil companies themselves.

Without the credit of BP and Sohio, the financing could not have taken place. Without the credit of other integrated oil companies participating in TAPS, there would be no pipeline and no prospect

of oil reserves being produced from Prudhoe Bay. Yet, S. 2387 appears on its face to prohibit the throughput and completion agreements whereby parent companies in effect guarantee the debt. In effect, what the divestiture proponents have proposed is the end of all new pipeline financing and the voiding of the security arrangements in many existing pipelines.

Now, I would like to turn to section 2 where we address the period following enactment of the legislation. What happens if it is enacted? In our opinion, enactment would result in substantial confusion and uncertainty as to the financial outlook for the petroleum industry. In this situation, we believe, it will be extremely difficult and in some cases impossible for affected companies to finance.

First, let us talk about how it would be accomplished. We think it would be very unlikely that any significant part of the assets could be sold for cash. For one thing, the market would be flooded with a glut of oil-industry facilities being offered for sale.

For another, in a capital-restricted environment, there would hardly be a large series of buyers for tens of billions of dollars of assets unless it might be some foreigners. Potential buyers, such as other oil companies not affected by the legislation, would certainly have difficulty securing funds; if they could be buyers at all, and I don't know.

It appears to us after analyzing all the alternatives, that the distribution would have to be made in very large part by spinoffs through existing shareholders. However, there are very serious problems even with this approach. The assets of the surviving company would be materially reduced, yet its obligations would remain diminished. Despite all the kinds of legal problems that Mr. Bator has already mentioned, we think it will probably be necessary to allocate the outstanding debt of each divesting oil company among the segments to be divested. Whether this would be done on book value, earnings, cash flow, would be problematic. In any case, nobody would have the faintest way of predicting how much debt the individual segments would be able to support.

We think lenders will be appalled by this. Allocation changes the nature of the original investment. Holding debt of several segments of a fragmented company is substantially different from holding debt of an integrated whole. Each segment would be viewed as inherently weaker, risker, and more vulnerable to swings and earnings in the original company. Lenders provide funds to an integrated petroleum company in the belief that they are protected by its assets and earning strength, as well as the covenants contained in relevant financing documents.

Someone might suggest the approach in the *Lowe's* case of joint and several obligations of the existing company and the new spunoff companies. As we understand what Mr. Bator has said, even this arrangement would not be allowed since it implies control under the statutory definition.

What of the position of the investors? They are not even given Hobson's choice; they are given no choice at all. They will be forced to accept lesser credits and the risk that all that entails.

We come to the conclusion that divestiture is going to take an extended period of time to accomplish. Every party who has an interest will want to be represented before the FTC and the courts to protect those interests. As we have heard, it means a multitude of litigants and years of uncertainty and confusion as plans are made, revised, opposed, and changed again.

While all this is going on, no investor is going to be very anxious to put up any capital. Investors have no liking for uncertainty. The passage of the proposed legislation would immediately create long-lasting uncertainty for the industry. My firm believes that investors, large and small, will attempt to dispose of their oil company securities, almost certainly at lower prices and under confused market conditions. We fear that billions of dollars of security values are going to be wiped out, to the detriment not only of large institutional investors, but also of their direct and indirect beneficiaries, such as insurance policyholders, pension fund beneficiaries, et cetera.

What would happen to a company trying to sell debt after the required splitup, but before the manner of affecting it and all the legal questions have been fully resolved. Investors simply would not have available for use their traditional yardsticks.

First: It would not be possible to calculate asset backing or debt-equity ratio for an indebtedness.

Second: It would be virtually impossible to appraise or predict the future earnings of the company.

Third: The investor would have no way of gauging the future marketability and price of the new debt security. He would probably be aware of the fact that credit ratings on oil company securities would most likely decline. Perhaps even to levels below that permitted for investment.

But finally, in the last analysis, who would the investors be? We think most traditional investors would be in the courts suing to protect the security of their outstanding loan. As investors, or more importantly, as fiduciaries, they would be unlikely to put up a penny more.

I will skip over the part on equity securities. We conclude that investors' savings would be lost or reduced and investors would probably suffer reductions in their dividend income. How long would these conditions of uncertainty continue? In my view, at least 10 years and perhaps longer, while the new entities are being tested for their economic viability.

Undoubtedly, a number of the segments will encounter serious problems. And some may well fail. The stronger ones will eventually survive. However, until they can demonstrate a pattern of successful earnings for a sustained period and until the strong and the weak have been separated, neither can expect significant institutional investor support in the provision of additional funds. Hence, many portions of the industry will go through a lengthy period of stagnation involving growing obsolescence of plant and inability to finance new projects.

In conclusion, it is our view that a major portion of the oil industry may be effectively closed off from capital markets for an indefinite period. As I have noted, the market for capital is becoming

more and more selective. And with the legal and financial uncertainties that will undoubtedly accompany a divestiture program. investors will simply place their funds in other companies and industries that they can appraise more readily.

The consequence of this to the oil company financing cannot be overstated. To the extent the exploration dollar cannot be raised, it will not be spent and the new oil will not be found. This could not come at a more critical time for our national energy policy. Our dependence upon foreign petroleum sources will have to increase even further, with all the consequences that has for defense and foreign policy.

Divestiture is not an experiment which can be tried without serious consequences. The price for enacting such legislation will have to be paid by someone. If not by the consumer in the price of petroleum product, then certainly by the taxpayer. Either prices will have to be raised to provide a sustained earning power for all segments of the industry, or the Federal Government will have to step in. We think it is important for Congress to realize that credit strength and the ability to finance which results from it is not something that can be restored to a company or an industry at will.

It takes a long time to build. We think the Congress should realize that if America's oil industry is torn apart, if contractual rights of petroleum company debtholders are abrogated, and if the basic credit strength of the industry is dissipated, the decision will be irreversible. The strength of our vertically integrated oil industry is not something that the Congress or anyone else will be able to restore.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Gary follows. Testimony resumes on p. 2000.]

PREPARED STATEMENT OF RAYMOND B. GARY, MANAGING DIRECTOR OF MORGAN STANLEY & CO.

Mr. Chairman and Committee Members, I am Raymond B. Gary, a Managing Director of Morgan Stanley & Co. Incorporated, an investment banking firm headquartered in New York City. I welcome this opportunity to comment on the bill introduced by Senator Bayh, S.2387, which requires dismemberment of the major United States integrated petroleum companies. I believe that such legislation would impair the financial strength of a major portion of the U.S. petroleum industry. It would impede the industry in raising the capital necessary to satisfy the energy requirements of this nation. Instead of promoting the availability of additional energy from domestic sources, the results of such legislation would be to create an extended period of uncertainty and weakness for domestic oil companies leading to even greater dependence on foreign sources of energy.

Before discussing in detail why I am so concerned about the implications of the present proposals, let me provide background on the perspective from which I am speaking. Morgan Stanley is an international banking firm engaged in the underwriting and placement of securities for corporations and affiliates, including not only many of the multi-national integrated petroin the form of public offerings or private placements in the world's capital markets the equivalent of over $97 billion of debt and equity securities. Morgan Stanley is also a member of the New York Stock Exchange and is involved in brokerage and market-making activities in both stocks and bonds. In addition, we provide general financial advisory services on a wide range of matters including long-range financial policy and planning. In this capacity

we have been closely involved with new large construction projects many of which are related in some way to the oil and gas industry.

In the 40 years of our history, Morgan Stanley has raised approximately $16 billion for 31 companies in the petroleum industry and their subsidiaries and affiliates, including not only many of the muti-national integrated petroleum companies directly affected by S.2387 but also smaller independent companies .In 1975, we arranged financing in the amount of approximately $3.9 billion for oil companies, including the largest private placement in history, $1.75 billion of long-term debt for two of the participants in the Trans Alaska Pipeline System.

Because we have had such extensive involvement in arranging financing for the petroleum industry, we hope that the Subcommittee will find it useful to have comments on the financial implications of the proposed legislation from an investment banker's point of view. (Attached as Exhibit I is a listing of and certain statistics for companies apparently affected by S.2387.)

Over the next decade the ability to secure funds from investors in the world's capital markets is going to be vital to the economic future of U.S. industry. For the first time in modern U.S. financial history, the supply of funds may not grow as fast as the potential demand for capital and financing considerations may act as effective constraints on the economy's capacity to finance fixed investment over the next decade.

Over the last five years, investors have become very quality conscious in choosing their investments; in the next few years, we would expect them to become increasingly selective. They will allocate their capital to the industries and companies and projects which represent the best investment opportunities. In light of this projected capital insufficiency, one element that has to be considered in evaluating the wisdom of legislation like S.2387 is the effect it would have on the ability of the affected oil companies to compete for investors' funds. We are forced to conclude that the proponents of a divestiture statute have largely ignored this element.

The petroleum industry has been and will continue to be an intensive user of capital. The era of cheap oil and cheap energy is over. Unfortunately, large discoveries of oil in the United States today are only being found in frontier areas such as the Arctic or deep offshore waters. The petroleum industry will be required to drill deeper, move farther offshore, explore in forbidding climates, transport over longer distances, and utilize more expensive recovery techniques, all of which are essential to add to our current sources of petroleum. If the credit of our U.S. based oil companies is weakened by legislation such as S.2387, they will not be able to attract the capital to do the job. Furthermore, a fragmented industry would have a seriously diminished capability of competing with foreign oil companies precisely at the time when many foreign nations are strengthening and consolidating their own national oil companies.

Prior to the Arab oil embargo of 1973, the petroleum industry enjoyed the highest degree of acceptability to investors in the capital markets of the world. Since that time, world petroleum economics have been importantly affected by the actions of the OPEC cartel. A number of factors arising largely as a result of OPEC actions—including skyrocketing costs, unilateral nationalizations, increased taxes, and governmental controls on prices—have caused investors to become concerned about the industry's continued investment attractiveness. The confusion arising from the passage of divestiture legislation would have the most disastrous impact of all; in our view, it could prevent most of the petroleum industry from financing in any significant amounts over the next decade except at prohibitive rates.

If the supply of capital to the petroleum industry dries up, as we believe it would, there would be only one source left to look for support in financing this most vital of our energy industries—the Federal Government. In the end, oil company divestiture could well lead to the need for a federal guarantee program, or some form of federal financing. We question whether this is what the Congress intends or the public wants.

My testimony is divided into two major sections. First, I will discuss the present and future needs of the petroleum industry for capital, and the circumstances which have been and will affect its ability to finance in an era of threatened and actual capital shortages. Second, I will consider the financial chaos which would ensue for the oil industry following passage of the proposed legislation.

I. THE CURRENT NEED FOR CAPITAL

Considerable study has been undertaken recently of the capital investment requirements of the U.S. economy over the next decade. Our total capital requirements in the United States between now and 1985 are awesome, and I believe no one disputes the urgent need for this capital investment. Treasury Secretary Simon has cited an estimated need for investment outlays in the decade ahead of $4 to 4½ trillion. Of this amount, $1 trillion would be needed through 1985 to explore and develop additional oil and gas reserves, build refineries and pipelines, develop coal resources, construct nuclear power and electric utility plants and provide for other facilities required to meet our energy needs. These numbers are of course estimates but, whatever the exact requirement, it is clear that the needs are enormous and must be described in trillions and not billions of dollars. The critical question is whether the supply of capital will be able to satisfy these potentiol demands.

Availability of capital as a constraint

We at Morgan Stanley have been interested in the subject of the enormous need for capital and how such needs will be financed for a number of years. Our interest came about initially as a result of being involved as financial advisor to some large projects, such as the Trans Alaska Pipeline and the Canadian Arctic Gas Pipeline. The estimated dollar requirements for such projects constantly increased in size and began to loom so large that they staggered the imagination. Most of these increases were a result of inflation and increasing emphasis on environmental requirements of the projects. As these estimated dollar totals rose, we began to question whether the funds to finance the undertakings would be available. It also became apparent that the electric utilities had enormous needs for capital to finance expansion of their generating plant capacity fired by oil, coal and gas, and also to finance new nuclear generating capacity whose capital costs are huge. Gas producing and distributing companies had similar demands and also needed capital for new sources of gas such as coal gasification plants. Other industries had additional large requirements. It seemed that none of the new projects our clients were studying had price tags of less than ½ billion and many were over one billion dollars. This prompted us to make an extensive study of the whole question of availability of capital.

We were particularly concerned about the next five years, since many of the specific projects on which we were working were scheduled for construction during that period. Our economic constultant, Professor Benjamin M. Friedman of Harvard University, undertook a major study of this subject, an updated version of which was subsequently published in The Sloan Management Review (Spring 1975) which is attached as Exhibit II. Our conclusion from this study was that whereas in the past the need for productive facilities in this country has determined the amount of capital which was raised, in the future the amount of capital which can be raised will determine the amount of productive facilities which will be built. In other words, availability of capital will act as a constraint on investment. Not all potential demands for capital will be satisfied.

Under these circumstances, only those companies or projects which represent the best investment opportunities will be able to attract sufficient capital. Lenders and equity investors are always faced with a wide selection of competitive investment alternatives vying for their attention. When capital comes into short supply, these investors derive the traditional benefits of a buyer's market, and become even more selective in the investment of their funds. Thy tend to demonstrate a preference for securities which appear to offer investors an attractive return with a high degree of safety. This preference for safety becomes heightened during periods of financial crisis or instability. Such selectivity was demonstrated during the difficult buyer's market in July-October of 1974, when certain lesser quality credits were altogether excluded from the public debt markets, and even the most creditworthy electric and gas utilities experienced difficulty in raising sufficient amounts of money on acceptable terms. At that time, many utilities found that the cost of fossil fuel had risen dramatically while certain state regulatory agencies had not permitted utilities to raise their prices to the consumer. The result was declining earnings, deteriorating credit ratings, a reduction in financing alternatives

and a significantly higher cost of financing. During that period no utility with credit ratings of less than Single-A was able to raise long-term funds. The only issues done by lower rated companies were done in intermediate rather than long-term maturities.

Moreover, interest rate differentials between issues of differing credit standing widened considerably. A dramatic example of the difference between strong and weaker credits came on October 1, 1974. On that day, Texas Power & Light, a Triple-A rated issuer, came to market with \$50 million of 30 year bonds at 10⅛%. The same day, Detroit Edison, a Triple-B rated issuer, also came to market. However, the maturity of its \$50 million of bonds was only 5 years, not 30 years, and the interest rate on the Detroit Edison issue was 12½% not 10⅛%.

We believe that passage of S. 2387, or even a continuing serious threat of its passage, may have the result of similarly diminishing access to or even excluding the petroleum industry from our market places.

Capital requirements of the petroleum industry

There have been a variety of estimates with respect to the future capital requirements of the petroleum industry. A widely cited study is that done by the Chase Manhattan Bank which estimated that on a worldwide basis the industry would need \$750 billion from 1970–1985 for capital and exploration expenditures. Adding \$450 billion for other financial requirements and working capital additions gave a total financial need for the period of \$1.2 trillion. These estimates are in 1970 dollars. Of course the factor of inflation increases considerably the actual dollar amounts of these estimates.

If we look only at the needs of the domestic petroleum industry, a reasonable estimate for capital and exploration expenditures for the decade from 1976 to 1985 would be in the range of \$400 billion or more. A comparable number has been derived by the Standard Oil Company (Ohio) by using the estimates developed in the Federal Energy Administrations Project Independence Blueprint and applying an annual assumed rate of inflation at 5 percent. First National City Bank in its Energy Memo of January 1976 estimates capital outlays for the oil industry in the United States at \$460 billion (in 1974 dollars) for the period 1976–1985. These estimates would indicate capital and exploration outlays for the domestic petroleum industry averaging over \$40 billion per year over the next 10 years, a dramatic increase above the approximately \$9 billion per year spent in the prior ten years.

Historically, oil companies were able to meet their needs for capital primarily out of internally generated funds—earnings, depreciation and depletion. In fact, for The Chase Manhattan Group of Companies, in the five year period 1960 to 1964 more than 87% of cash needs came from these sources. Since that time the percentage steadily declined to 76% in the next 5 years and 72% in the 5 year period 1970 to 1974. This resulted in a corresponding increase in the need to utilize the capital markets for external financing and to raise further funds through the sales of assets and other financial transactions. Over the last 15 years the major petroleum companies covered in the Chase Manhattan Survey had to increase their reliance on external funds from an annual average of \$1 billion in 1960–64, to \$3.1 billion in 1965–69 and to \$7.2 billion 1970–74. Over that period, debt and other long-term credits as a percent of total capitalization increased from 17.8% at December 31, 31, 1960 to 30.9% at December 31, 1974. (See Exhibits III and IV.)

In 1974, even though it was a year of record earnings for these companies because of substantial inventory profits, they had to raise \$10.8 billion from external sources of which \$6.4 billion was in long-term debt and sales of capital stock.

Current investor concerns with respect to the petroleum industry

Just as professional investors over the years have traditionally favored oil industry securities, individuals have also invested extensively in them. Millions of individuals directly or indirectly own the common stock and bonds of these companies. In the wake, however, of a number of disturbing actions by our own Government and those abroad, both debt and equity investors are beginning to express concern about the attractiveness of oil investments. At Morgan Stanley we have seen evidence of this concern displayed in the prices

and yields at which oil company securities sell in relationship to other comparable quality securities.

Anyone can see what has been going on by looking into the daily newspapers; the most striking recent events, of course, have been nationalization of reserves by foreign countries, elimination of the oil depletion allowance in the United States, and increased taxes in almost all jurisdictions. The Energy Policy and Conservation Act rolling back the price of oil and continuing government oil price fixing that was recently signed into law was a continuation of policies which have impeded, and will continue to impede, the petroleum industry from forming the capital which is needed for this country to move towards our national goal of reasonable energy self-sufficiency. It is quite apparent that such actions have reduced the petroleum industry's cash flow and therefore substantially increased its need for external financing. It has been estimated that the effect of the elimination of the depletion allowance and the Energy Act could be to reduce the domestic petroleum industry's cash flow by as much as $4 billion per year—cash flow that could have been utilized in the expensive search for new oil in the United States. This amount is equivalent to almost 20% of the capital expenditures of the petroleum industry in the U.S. in 1974.

As the petroleum industry's ability to generate funds internally continues to be impaired by these policies, it becomes clearer and clearer to investors that the industry will require an unprecedented amount of external financing in the future, and that its economics will be substantially less attractive than in the past. The effects will be felt both in long-term debt and equity markets. Investors also recognize that the factors causing the decline in internal generation of funds also tend to make petroleum industry securities less attractive investments, since smaller cash flow produces a lesser ability to service existing and future debt, and indicates as well the probability that a lesser portion of earnings would be paid out to investors as dividends. From the point of view of a lender the industry may become less creditworthy; while from that of an equity investor it appears to be turning less profitable, with the concomitant erosion in his potential for return either through dividends or through capital appreciation.

Tangible evidence of investor concern

The cost of capital to the petroleum industry has already shown signs of increasing. A differential between yields on petroleum company debt issues and non-petroleum industrial company debt issues of similar bond quality rating has developed over the past several years. We believe that this differential in interest costs has developed largely from two factors: the anticipated large amounts of financing required by the petroleum industry, and the concern over the ability of these companies to maintain their bond quality ratings. For instance, while petroleum company securities used to sell at a small premium over the prices of other comparably-rated industrial securities, our more recent experience has been that they are now selling at discounts from such prices, and that these discounts have been as high as to produce a yield differential of 20 to 25 basis points from time to time. Exhibit V is a weekly yield comparison from the end of 1974 up to the present for certain Triple A oil company and non-oil company bonds. Correspondingly, in the equity markets the common stocks of the major petroleum companies are generally trading at price levels much lower in relationship to their earnings than they have traded in the past and at a level lower than their historic relationship to the price earnings ratio of other industrial companies, as shown by the attached chart. Exhibit VI is an analysis of the price earnings ratios of 10 large oil companies and shows the decline of those multiples relative to Standard & Poor's Composite index for time periods between 1965 and 1974.

In assessing investment quality, professional investors and rating agencies are concerned not only with historic performance, as measured by various statistical financial ratios, but also long-term prospects for earnings growth, financial stability, and general economic viability. When many professional investors purchase a security they are making a judgment about investment quality which they expect will be appropriate for an extended period of time. For example, bond issues may have maturity dates as much as 30 years in the future. Professional investors, therefore, take considerable interest in such

factors as supplies of raw materials, ability to transport products to the market, and availability of market outlets for the product. Our experience in selling petroleum company securities over the years has been that investors place a high value upon the fact that the larger companies are vertically integrated and are hence generally more stable and economically more efficient, exhibiting a consequent lesser risk from an investment point of view. In our view, the generally high investment quality of these larger petroleum companies is in many respects attributable to the benefits of their vertically integrated structure.

The ratings accorded to debt securities by established Bond Rating Services are important matters. Investors are becoming concerned that the petroleum companies may not be able to maintain their generally high ratings. These ratings are an evaluation of creditworthiness, and are critical factors in determining the cost and frequently the very ability to finance in today's volatile capital markets. Not only does a rating affect the terms of and the interest rate a corporation must pay on its debt securities, a rating bears directly on the breadth of market for a debt security. Quite simply, companies with the higher ratings can borrow more money. Many state and municipal pension funds, for example, can invest only in debt securities which have ratings at or above a certain level, and many small institutional investors and trust accounts rely upon rating agency appraisals because they are not adequately staffed to do their own independent analysis.

Top grade debt ratings are going to continue to be important to petroleum companies because they are going to need to borrow more than they ever have before and the largest amounts are available to the highest rated issuers. In our opinion, however, divestiture of the oil industry would result in a reduction in ratings, in many cases to a level below the minimum required for investment by a wide range of institutions. Certainly, such a reduction must inevitably bring forth a contraction in the industry's ability to borrow.

An example: the Trans-Alaska Pipeline System

In order to illustrate what I have been saying about how important it is for the petroleum industry to maintain a strong credit position, I would like to tell you something about the financing of the Trans-Alaska Pipeline System ("TAPS" or "the System").

This is a matter with which I am personally very familiar. I was in Anchorage in February, 1969 attending a lunch at which it was first publicly announced the System would be built, and I have worked almost continuously since that time with one or another of the participants on the financing of the System.

As you know, the Congress deemed this System to be of strategic importance to the nation when it passed the Trans Alaska Pipeline Authorization Act in November 1973, and as you have been told many times in these hearings, the System is the largest single project ever built and financed by private enterprise. The latest estimate of the cost is in excess of $7 billion not including contingencies or interest during construction. When those factors are added, the overall cost will be in excess of $8 billion. In addition, with field development costs and the tanker fleet to bring the crude oil from Valdez to the West Coast, the grand total is over $13 billion—all of which will be spent before a cent is returned. Costs of the same order of magnitude will also be incurred to develop and deliver the gas reserves in the Prudhoe Bay field.

To set the stage, I will discuss first how oil pipeline have been financed in the past and why most of it has had to be done by oil companies.

To start off with, oil pipelines are risky investments, even for oil companies. They transport only one commodity over a fixed route in one direction. The investment therefore is inflexible and cannot be easily altered to respond to changed distribution patterns. The owners of the systems are exposed to many risks that are completely beyond their control. These include production declines, proration, government controls, imports, changes in fuel requirements, environmental complications and the development of alternate energy sources. Further, since oil pipelines do not have exclusive franchises or certificates of necessity, they compete for transportation business with other pipelines as well as other forms of transportation.

Second, they are capital intensive; it is vital, therefore, that they achieve economics of scale. The major share of pipeline costs are fixed and bear no

relationship to the volumes transported. For this reason the profitability is sensitive to volume declines. In modern large-diameter pipelines a small percentage reduction in throughput can result in severe losses unless tariffs are increased.

Because of these risks—and these risks are inevitably borne by the oil industry and not by investors—most oil pipeline systems in this country have been built by the oil interests they serve. As contrasted to the practice in the gas industry, no one else has an economic incentive to build a multi-million dollar oil pipeline, nor would a third party issume these risks without some assurance of throughput to cover them.

Because lenders are acutely aware of the risks, they have almost inevitably insisted when financing pipelines that they have the credit of the appropriate shipper-owner oil company backing the credit of any pipeline borrower. The credit backing is either direct (in the case of undivided joint interest systems, such as TAPS) or indirect (in the case of pipelines financed as a project and organized in corporate form.) In the latter case the debt is secured by the pledge of completion agreements and throughout agreements undertaken by parent company shipper-owners of the pipeline. Almost uniformly, the security agreements include unconditional commitments of the shipper-owners to complete the facilities, to operate them, and if operation is interrupted for any reason, to take necessary steps to restore the facilities to operation but, most important, to pay enough to cover the outstanding indebtednes of the pipeline whether or not such completion, operation or repair ever takes place. These agreements, in fact, are firm applications of the full credit of the oil companies involved and, for the purposes of financing, are the equivalent of guaranties of the pipeline companies' indebtedness. In case of undivided joint interest systems each owner company completes its own share of the system and finances its share of the cost across the range of its entire capital structure.

Whether the credit backing is direct or indirect, the consequence for the lenders is the same—the risks of failure of the pipeline operation have been put upon the oil companies. The consequence for the oil companies is also the same—they have dedicated the parent company resources and credit to get the pipeline financed.

At this point I would like to return to TAPS, where the risks I have been talking about become prodigious in size, many times what they are for crude oil lines in the lower 48 states. The most serious risk of all (and therefore the greatest potential liability for TAPS owners) is the risk that the line may not be completed. Such a matter is worrisome for lenders for the reasons often cited—the harsh environment, escalating costs, environmental delays, weather, or any other unforeseen problem which endangers completion. A pipeline is worthless until the last mile is built.

In order to have a specific example to talk about let me tell you a little about a private placement that we completed last November. The placement was for Sohio/BP Trans Alaska Pipeline Finance Inc., a joint financing vehicle used by The Standard Oil Company (Ohio) and The British Petroleum Company to finance their share of the system. Together, these companies own just under 50% of the 1,200,000 barrel per day system and their share of the costs is presently estimated to be between $5½ and $6 billion, including associated field development expenditures and tankers. The principal amount of the private placement was $1,750,000, comprising two issues of guaranteed notes due 1993 and 1998, both with an interest rate of 10⅝%. Drawdown of $1.055 billion of bonds occurred in 1975, and there are additional closings scheduled quarterly through the second quarter of 1977. The issue was placed with 76 investors including life insurance companies, fire and casualty companies, public and private pension funds, savings banks, and other institutional investors—and in almost every case these institutions made investment commitments exceeding the amounts they had previously invested in any one issuer.

It should not be surprising, therefore, for me to tell you that the economics of the project and the credit of the companies were weighed with more care than any other financing I have known. The lenders sought to ensure themselves from every conceivable angle that the project would indeed be economically viable and that the borrowers could protect themselves to the maximum extent possible against the onslaught of every risk that could be imag-

ined. The guarantors were analyzed for their capacity to withstand massive overruns in cost or delays in time, and there were elaborate protections built into the loan documents themselves to give the lenders a right to intervene if trouble was threatened. The basic security for the financing was viewed by lenders as the oil in the ground at Prudhoe Bay; and there were elaborate provisions which had the purpose of tying the oil and the pipeline inextricably together so that the security could not be endangered. There were detailed restrictions put upon SOHIO's ability to dispose of the oil, and a prohibition against either parent selling or assigning the equity of their pipeline subsidiaries. To make sure that the strongest possible credit was involved, the lenders required both completion and throughout agreements in addition to the direct guarantees of the debt by the respective parent companies—thus, in effect, giving the lenders recourse against the project itself as well as the general credit of the parent oil companies.

Without the credit of BP and SOHIO, this financing could not have taken place. Moreover, without the credit of the other integrated oil companies participating in TAPS, there would be no pipeline and no prospect of oil reserves being produced from the Prudhoe Bay area. Yet S. 2387 appears on its face to prohibit the throughput and completion agreements whereby the parent oil companies in effect guarantee the debt incurred in building this pipeline, as they generally do in other pipeline financings. What the divestiture proponents have in effect proposed is the end of all new pipeline construction and the voiding of the security behind many existing pipeline financings. Even when oil was cheap and domestic reserves adequate to supply our needs, such action by the Government would have seemed unwise; with capital scarcity upon us and a national policy designed to reduce our dependence on foreign supply, one would have to describe such a proposition as reckless.

Summary of the current situation

The petroleum industry is already in a position where it must surmount steep hurdles in order to provide for a major portion of this country's energy needs. At a time when projected demand for capital is enormous in all industries, the petroleum industry is going to require capital in unprecedented amounts. At the same time a variety of governmental actions are beginning to impair the industry's credit standing and significantly reduce its cash flow. In addition, there is a prospective capital insufficiency emerging in which lack of availability of capital will act as a constraint on the amount of productive facilities that can be built.

Now the petroleum industry must face the even gloomier prospect that it must meet these challenges while at the same time dismembering itself under legislative fiat. Let me describe the serious financial consequences that would result from the passage of a divestiture bill such as S. 2387.

II. INTERIM PERIOD FOLLOWING PASSAGE OF THE PROPOSED LEGISLATION

In our opinion, enactment of the legislation would result in substantial confusion and uncertainty as to the financial, legal and operating outlook for the petroleum industry. In this environment we believe it will be extremely difficult or, in some cases, impossible for the affected companies and other segments of the industry to finance. This conclusion will obviously have important effects on operating and planning decisions of the industry.

Future capital expenditures

What will happen to capital expenditure programs? They will undoubtedly have to be curtailed. Some programs of course, will be continued if at all possible, such as partially completed pipeline projects and undeveloped oil fields which require further expenditures to place them into production. But other capital expenditure programs would be reduced while management reviews which sectors are to be divested and studies the potential economic viability of individual sectors standing alone. We must assume that such legislation and its implications would occupy virtually all the time of top management until some solution has been reached. For instance, it would not be surprising for a company electing to stay in the producing sector to place its refining, marketing and transportation operations on a care and maintenance basis only. This is because there would be doubts as to whether any additional investments in such facilities would be recovered on divestiture.

Moreover, it might not be possible to secure the external funds needed for such additional projects, or for that matter, the funds necessary to complete existing projects.

How would divestiture be accomplished?

It would seem most unlikely that any significant part of the assets to be divested could be sold for cash. For one thing, the market would be flooded with a glut of oil industry facilities being offered for sale. For another, in a capital restricted environment, there would hardly be a large series of buyers for tens of billions of dollars of assets unless it might be foreign entities which could be at variance with our national interests. Potential buyers such as other oil companies not affected by the legislation would certainly have difficulty securing such funds if they can be buyers at all. As pointed out in the testimony of Peter A. Bator this morning, the definition of "control" in the bill would impede any such sales from being made in exchange for securities of the buyer, since ownership of such securities would imply continuing control of the prohibited assets.

We doubt that companies outside the petroleum industry would want to make major investments in any aspect of the industry during this period because of the uncertainties faced by the new oil company segments. We also assume that antitrust principles would prevent accomplishment of the required reorganization through the swapping by the companies among themselves of the various segments of their existing business.

It appears, therefore, that the distribution will have to be accomplished in very large part by "spin-offs" to existing shareholders. However, there are serious problems even with this approach. The assets of the surviving company would be materially reduced, yet its obligations might remain undiminished. Such a wholesale distribution of assets to shareholders would not be permitted under the existing debt instruments of many companies, and would raise serious questions under the debt instruments of the others. As we heard this morning from Mr. Bator, even potential violations of covenants that could lead to defaults would in all probability require court determination at the insistence of holders of debt and persons representing these holders, such as indenture trustees. And whether the resolution is voluntary, under court decree or under order from the Federal Trade Commission, it will be necessary in all likelihood to allocate the outstanding debt of each divesting oil company among the segments to be divested. The debt might be allocated according to the book value of assets, earnings, or cash flow of each segment if such financial statistics could be constructed. However, there is no way to predict with certainty how much debt the individual segments would be able to support.

What effect would allocation of debt have on the opportunities for segmented oil companies to raise capital? We believe lenders will be distressed about such a result. After all, allocation changes the nature of the original investment; holding debt of several segments of a fragmented company is substantially different from holding debt of the integrated whole. Each segment is inherently weaker, riskier, and more vulnerable to swings in earnings than the original company. Lenders provide funds to an integrated petroleum company in the belief that they are protected by its asset and earnings strength as well as the provisions of and covenants contained in the relevant financing documents. There are good and valid reasons why indentures and loan agreements include such covenants as negative pledge clauses, sale and leaseback restrictions, dividends and debt limitations, sale merger and conveyance of assets provisions—they are written to protect investors, many of which are fiduciaries and have a duty to protect their beneficiaries from an undermining of the security of their investments.

One solution to the removal of the protection of these covenants will undoubtedly be proposed: let all the outstanding debt become joint and several obligations of the existing company and the new spin-off companies. This cross guarantee arrangement might not create as good a credit for the existing debtholders as the credit of the existing integrated company, but it would at least provide the security backing of the same assets. Apparently, however, this arrangement would not be allowed under the provisions of the legislation since it implies continuing mutual interest and possible "control" under the statutory definition. The investors are not even given Hobson's Choice, but no

choice at all—they will be forced to accept lesser credits and the risk that such a result entails. Bond holders and trustees on their behalf can be expected to take every action open to them—including litigation—to protect the security of their investments, but the court remedy is expensive and time consuming and not necessarily very productive.

Impracticality of rapidly working out a fair and equitable plan

Anyone who recognizes the complexities inherent in slicing up a major industry must reasonably come to the conclusion that it is going to take an extended period of time to accomplish. As you have heard this morning, every party who has an interest in the proceeding (creditors, equity investors, joint venture partners, labor unions, and anyone else with contractual relationships) will want to be represented before the FTC and the courts to protect those interests in any proposed or revised plan. This means a multitude of litigants and years of uncertainty and confusion as plans are made, revised, opposed and changed again. I believe, therefore, that an extended period of time (far longer than the short three year period provided by S. 2387) will be required for a company and the FTC to devise (and the courts in various appeals to approve) a plan which complies with the legislation, establishes new businesses, and is as fair and equitable to all parties as the legislation permits. In any event, while plans are being studied, debated and litigated, the industry is not going to be making much progress and no one is going to be anxious to put up new capital.

Effect on foreign investments of the affected companies

S. 2387 purports to act extraterritorially—that is, it could force a company which is deemed to be, for example, a major producer in the United States to get rid of all its domestic and foreign downstream assets. It is clear that in many circumstances foreign lenders would be able to challenge a purported allocation of contractual obligations resulting from an FTC divestiture order in a foreign court, and have a good chance of enforcing their grievances by seizing foreign assets of the oil company.

The complexity of domestic divestiture is difficult enough; I won't try to evaluate the possible consequences on the oil companies' foreign operations themselves. Some of the foreign refineries and other assets could be sold to foreign oil companies, especially those rich in capital. But under the postulated circumstances, divestiture would have all of the attributes of a bankruptcy sale with foreign buyers in a dominant position to acquire a multitude of U.S. investor-owned foreign assets at substantial discounts from their true value. In summary, S. 2387 would seriously damage the credit of U.S. oil companies overseas, might disadvantageously affect that of other U.S. companies in foreign markets, and could also lead to a massive windfall for foreign oil companies.

Financing during the interim period

I have stated above that we believe that it will be extremely difficult or impossible for a larger sector of the petroleum industry to finance once the proposed legislation is passed. In order to amplify on that statement let me pose a series of questions:

What would be the reaction of investors in petroleum company stocks and bonds?

What would happen to the market prices of outstanding debt and equity securities?

Will it be possible to do any financing at all after passage of a divestiture statute?

Investors have no liking for uncertainty; the passage of the proposed legislation would immediately create long lasting uncertainty for the industry. Our firm believes that investors, large and small, will attempt to dispose of their oil company securities, almost certainly at lower prices under confused market conditions. We fear that billions of dollars of security values are going to be wiped out, to the detriment not only of large institutional investors, but also of their direct and indirect beneficiaries, such as life insurance policy holders, pension fund beneficiaries, and individual investors (Exhibit VII sets forth the composition of share ownership of the six largest oil companies and Exhibit VIII illustrates the type of investors purchasing recent bond issues).

The sell-off would extend even to sophisticated lenders, who would be dismayed at the legal tangles you have heard about this morning. Realizing that legal positions bargained for to bring the maximum amount of security are susceptible to unilateral revision, such lenders would obviously reassess their securities holdings and their investment policy toward the industry.

What would happen to a company trying to sell debt after legislation had been pased requiring split up, but before the method of effecting it and the legal questions had been fully resolved? Both the rating agencies and potential investors would want to know what assets would be available to support the obligation. They would want to be able to evaluate the economic viability of the company behind the security. But the investor would be unable to analyze several critical financial yardsticks.

First: It would not be possible to calculate the asset backing or debt equity ratio for a new debt issue. The professional investor would know that at some point during the life of the issue the company was to be divested of a large, perhaps a major, part of its assets and that a certain amount of debt might, or might not, be passed along to the segments. As far as making calculations, however, the investor would be in the dark.

Second: It would also be virtually impossible to predict the future earnings of the company. This is, after all, the principal measure of a company's ability to service its debt, and the most important element in assessing the market prospect for its common stock. While it may be possible to make some estimates of future earnings from the production segment, economic projections for the refining and marketing divisions would be pure conjecture due to uncertainties regarding prices and volumes for purchases and sales of crude and product.

Third: The investor would have no way of gauging the future marketability and price of the new debt security. He would be aware of the fact that the credit ratings of oil company securities would most likely decline—perhaps even to levels below that permitted for investment. He would also be aware that there were many billions of dollars of already outstanding oil company debt (approximately $21 billion at December 31, 1974 for the twenty companies listed on Exhibit I) that might have had their investment ratings lowered because of this uncertainly and a large part of which might be potentially for sale. There would virtually be no way to evaluate with any degree of accuracy the credit of companies in such a situation. In addition, there would remain the serious question of whether the rating agencies would be able to assign any ratings whatsoever to the debt of such companies.

Fourth: Under the possible solution of joint and several liability, each company would be contingently liable for obligations, far in excess of their ability to service, and would be subject to the risk of failure by another company over which it had no control or influence.

Finally, and in the last analysis, who would the investors for new issues of oil companies be? Most traditional lenders, having already purchased oil company securities prior to the advent of divestiture legislation, would be suing to protect the security of their outstanding loans to the affected companies. As investors, or more importantly as fiduciaries, they would be unlikely to lend one penny more, on whatever terms.

What of the market for equity securities during this period? This market is part institutional and part individual. The concerns that investors would have in connection with debt securities will be equally reflected in the equity market. Professional security analysis during the critical period will be speculative at best, and institutions could be expected to be large sellers on balance of oil company stocks, as they look to reinvest the funds in industries susceptible of being appraised.

The individual investor in stocks looks either to dividends or to potential capital gains. The significant reduction of the flow of debt funds to oil companies will result, as I indicated, in a serious cash shortage for them. It should be noted that in 1974 the net long-term debt increase of the 29 oil companies in the Chase Survey—which totaled $2.15 billion—was equivalent to 47% of the total cash dividends paid to shareholders. Under conditions of cash shortage the reduction of dividends would be one of the most tempting areas in which to reduce cash outflow. Upon such a reduction, of course, millions of investors would suffer from diminished incomes after already having suffered a probable decline in the market value of their savings. As

most of the companies in the oil industry would be going through a long period of confusion, restructuring and restraint, there would be little prospect for capital gains. The market for oil company equity securities would be one of depressed disarray.

How long would these conditions of uncertainty continue? In my view, at least ten years, and perhaps longer. The process of untangling the initial state of confusion will take a certain amount of time. Thereafter, there will follow a period of many more years while the new entities are being tested for their economic viability after the divorce from the inherent economic strength of vertical integration. Undoubtedly, a number of the segments will encounter serious problems and some may well fail. The stronger ones will eventually survive. However, until they can demonstrate a pattern of successful earnings for a sustained period and until the strong and the weak have been separated, neither can expect significant institutional investor support in the provision of additional funds. Hence, many portions of the industry will go through a lengthy period of stagnation, involving growing obsolescence of plant and inability to finance new projects.

Long-range consequences

What will the oil industry look like after the completion of a divestiture program, ten to twenty years after the passage of a statute like S. 2387? I regret that I do not have a crystal ball, and it would be hard to be confident about any predictions even if I did. Moreover, hypotheses in many areas go far outside the confines of traditional investment banking. For example, I believe that costs will be higher generally—duplication of management functions in the separated segments will guarantee that—but I have no idea what magnitude the increases might run. And while I have an opinion that divestiture would reverse a positive trend toward economies of scale, I could not document or quantify the assertions made during these hearings on this point—such as, (i) that fragmented research and the attendant reduction in research budgets will mean fewer new ideas, (ii) that smaller companies will be unwilling and unable to undertake any but the smallest projects, or (iii) that the segmented producing industry will be in a far weaker position than our current integrated companies to negotiate with foreign governments over the crude supplies we will undoubtedly continue to require.

I do believe, however, that the host of smaller companies which will be in business after the completion of divestiture will find it more costly and more difficult to get the financing they will need. Each new sector will lack the greater stability of an integrated operation and consequently will be more subject to risks and earnings fluctuations. As such, its cost of capital must be higher to compensate for these risks, and indeed there may well be a number of new companies which will not be able to raise the funds they require at any reasonable price. The overall effect of these changes upon a highly capital intensive industry has to be higher financing costs and hence higher revenue needs. These revenues can come only from higher selling prices, ultimately reflected in heating bills and at the pump.

III. CONCLUSION

If S. 2387 is enacted, it is our view that a major portion of the oil industry may be effectively closed off from the capital markets for an indefinite period. As I have noted, the market for capital is becoming more and more selective, and with the legal and financial uncertainties that will undoubtedly accompany a divestiture program, and the long delays for final resolution, investors will place their funds in companies in industries that they can appraise more readily and from which they can expect a surer and safer return.

The consequences of this to oil company financing cannot be overstated. To the extent the exploration dollar cannot be raised, it will not be spent and the new oil will not be found. This could not come at a more critical time for national energy policy. Our dependence upon foreign petroleum sources will have to increase even further, with all the consequences that dependence may cause in areas of defense and foreign policy.

Divestiture is not an experiment which can be tried without serious consequences. The price for enacting such legislation will have to be paid by someone—if not by the consumer in the price of the products then cetarinly by

the taxpayer: either prices will have to be raised to provide a sustained earning power for the industry, or the Federal Government will have to step in, with programs of guarantees, insurance, or even direct subsidies.

It is important to realize that credit strength and the ability to finance important capital expenditures due to credit strength is not something which can be restored for a company or an industry at will. It takes a long time to build. The Congress must realize that if America's oil industry is torn asunder under this bill, if the contractual rights of petroleum company debt holders are abrogated, if the basic credit strength of the industry is dissipated, the decision will be irreversible. The strength of our vertically integrated oil industry is not something that Congress or anyone else will be able to restore.

LIST OF EXHIBITS

Exhibit I.—Certain Statistics for Companies Apparently Affected by Provisions of U.S. Senate Bill S. 2387.

Exhibit II.—"Financing the Next Five Years of Fixed Investments" by Professor Benjamin M. Friedman.

Exhibit III.—Sources of Funds of the Chase Manhattan Group of Petroleum Companies 1960–1974.

Exhibit IV.—Capital Expenditures and Sources of Capital of the Chase Manhattan Group of Petroleum Companies 1960–1974.

Exhibit V. Weekly Yield to Maturity Comparison for Selected Aaa/AAA Oil Company and Non-Oil Company Long-Term Bonds.

Exhibit VI.—An Analysis of the Price Earnings Ratios of Selected Oil Companies for the Ten Years Ending 1974 Relative to the Standard & Poor's Composite Index.

Exhibit VII.—Composition of Ownership of the Six Largest U.S. Oil Companies.

Exhibit VIII.—Summary of Sales by Types of Institutions of High Grade, Long-Term Petroleum Company Debenture Issues.

Exhibit I

CERTAIN STATISTICS FOR COMPANIES APPARENTLY AFFECTED BY PROVISIONS OF U.S. SENATE BILL S. 2387 [1]

Company	Areas affected by proposed legislation: Annual domestic production [2] 36,500,000 bbl or 200,000,000 ft³	Annual domestic refining [2] 75,000,000 bbl	Annual worldwide marketing [2] 110,000,000 bbl	Transportation [2]	Total [3] assets (in millions)	Total long-term debt (in millions) [3]	Number of common shareholders [3]	Total stockholders equity (book) value) (in millions) [3]	Market value of common stock as of Jan. 16, 1976 (in millions) [4]	Number of employee
Amerada Hess Corp	No	Yes	Yes	Yes	$2, 255	$641	19, 196	$945	$461	5, 779
Ashland Oil, Inc	No	Yes	Yes	Yes	1, 716	331	59, 368	662	545	27, 000
Atlantic Richfield Co	Yes	Yes	Yes	Yes	6, 152	1, 219	132, 863	3, 455	4, 188	28, 800
Cities Service Co	Yes	Yes	Yes	Yes	2, 898	569	122, 944	1, 674	1, 123	17, 400
Continental Oil Co	Yes	Yes	Yes	Yes	4, 673	893	69, 192	2, 054	3, 498	41, 174
Exxon Corp	Yes	Yes	Yes	Yes	31, 322	3, 052	707, 000	15, 724	20, 243	133, 000
Getty Oil Co	Yes	Yes	No	Yes	3, 004	158	16, 632	1, 835	3, 185	11, 364
Gulf Oil Corp	Yes	Yes	Yes	Yes	12, 503	1, 471	372, 415	6, 329	4, 576	52, 700
Marathon Oil Co	Yes	Yes	No	Yes	1, 800	208	42, 891	997	1, 332	9, 465
Mobile Oil Corp	Yes	Yes	Yes	Yes	14, 074	1, 729	226, 100	6, 436	5, 169	73, 100
Pennzoil Co	Yes	No	No	Yes	1, 798	797	46, 303	515	651	9, 487
Phillips Petroleum Co	Yes	Yes	Yes	Yes	4, 028	658	131, 621	2, 274	4, 342	30, 802
Shell Oil Co	Yes	Yes	Yes	Yes	6, 129	977	31, 917	3, 560	3, 454	32, 287
Standard Oil Co. of California	Yes	Yes	Yes	Yes	11, 640	1, 015	274, 000	6, 450	5, 074	39, 540
Standard Oil Co. (Indiana)	Yes	Yes	Yes	Yes	8, 915	1, 427	163, 556	5, 125	6, 139	47, 217
Standard Oil Co. (an Ohio corporation).	No	Yes	Yes	Yes	2, 621	805	39, 536	1, 244	1, 925	20, 300
Sun Oil Co	Yes	Yes	Yes	Yes	4, 063	679	48, 211	2, 247	1, 152	27, 707
Tenneco Inc	Yes	No	No	No	6, 402	2, 054	238, 275	2. 142	2, 201	81, 000
Texaco, Inc	Yes	Yes	Yes	Yes	17, 176	1, 897	340, 520	9, 003	6, 854	76, 420
Union Oil Co. of California	Yes	Yes	Yes	Yes	3, 459	648	76, 400	1, 923	1, 442	15, 364
Total					146, 628	21, 228		74, 594	77, 554	779, 906

[1] U.S. Senate bill S. 2387 states that it shall be unlawful for companies to control businesses which qualify under more than one of the following criteria:

(a) Annual domestic production greater than 36,500,000 bbl (100,000 bbl/d) of crude oil, condensate, and natural gas liquids or 200,000,000 ft³ (547,945,000 ft³/d) of natural gas.

(b) Annual domestic refining greater than 75,000,000 bbl (205,479 bbl/d) of refined products.

(c) Annual worldwide distribution or marketing greater than 110,000,000 bbl (301,370 bbl/d) of refined products.

(d) Domestic or International Transportation of crude oil or refined products in pipelines.

[2] Based on 1974 data as available from public sources.

[3] As of Dec. 31, 1974, reported in the annual report or 10-K of the company.

[4] Calculated as: Common shares cutstanding on Sept. 30, 1975, times closing common stock price on Jan. 16, 1976.

Exhibit II

SLOAN MANAGEMENT REVIEW—MASSACHUSETTS INSTITUTE OF TECHNOLOGY

FINANCING THE NEXT FIVE YEARS OF INVESTMENT [1]

(Benjamin M. Friedman, Harvard University)

In this article Professor Friedman explores the likely financial market background within which fixed investment projects will compete for capital during the five years following the current recession and the earliest stages of recovery. He concludes that because of the combination of economic growth and a shift in the composition of spending toward fixed investment, financial considerations may well constitute an unusually important determinant of the basic course of U.S. economic events during this period. *Editor*

Introduction

"Capital shortage" is rapidly becoming one of the phrases most frequently used—and perhaps abused—in referring to the medium-term prospects for U.S. financial markets. The economy's list of investments to be undertaken once the current recession has ended has grown at an astonishing rate, while price inflation is steadily rendering each item on the list more expensive. Furthermore, the past year's performance of the capital markets has frightened many investors away from long-term financial assets, including most of the vehicles by which the U.S. economy has traditionally financed its fixed investment.

The severity of the current recession has to some extent shifted the focus of this problem from financing business investment, which has slowed as the recession has deepened, to financing the federal deficit, which is rapidly growing as a result of both the revenue impact of the recession itself and the shift toward a more stimulative fiscal policy. When the recession ends, however, the economy must face the problem of either financing or abandoning its fixed investment plans. Where and how will corporations find the capital necessary to finance the investment of the late 1970s and beyond? Will there actually be a "capital shortage"? Will the economy have to compromise its ambitious investment plans?

The object of this article is to explore the likely financial market background within which individual fixed investment projects, both large and small, will compete for capital during the five years following the current recession and the earliest stages of the subsequent recovery—i.e., during the years 1977–81. Underlying this analysis are several basic assumptions about the U.S. economy's growth and inflation, the federal government's tax and expenditure policy, and the Federal Reserve System's monetary policy. This article summarizes in some detail a set of financial market projections based on a convenient set of "benchmark" assumptions, and the concluding section briefly examines the implications of two alternatives to the key policy assumptions.

As the economy's output and spending grow during the coming years, the composition of these totals will be changing in ways which are likely to have major repercussions in the financial markets. During the 1977–81 period, this interplay between growth and compositional shift will function in counterpoint to the interplay between financial markets and product and factor markets. The working of the economy will synthesize these several forces, which will be in part conflicting and in part complementary, into some end result in terms of the balance of economic and financial aspects of that balance will be and to identify the resulting pressures which will emerge.

Principal conclusions

Two important conclusions emerge from this analysis:

1. A major key to the U.S. economy's growth, once the current recession has ended, will be fixed investment for a wide range of basic plant and equipment needs. Indeed, the primary direction of compositional change in output and spending during 1977–81 is likely to be a combined shift toward fixed investment.

2. To an unusually great extent, financial considerations may act during this period as effective constraints on the amount of fixed investment which

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[1] The author is grateful for helpful and stimulating discussions with James S. Duesenberry and Stephen P. Taylor.

the economy is aggregate is able to do. During 1977–81 financial constraints may well constitute a greater determinant of the basic course of U.S. economic events than has been the case at anytime during the post World War II era.

The weakness of U.S. fixed investment in 1975 is very likely to prove temporary. After the recession, the amount of fixed investment in the U.S. economy will rise, both absolutely and as a fraction of total economic activity, and so the relevant financial markets will have to expand as well. Financing this fixed investment, a task which must combine a *redirection* of financial flows with an *expansion* of total flows, will be the major problem confronting the money and capital markets. As business undertakes more investment in the aggregate, any individual investment project will have to face increasingly severe competition for financing, since the financial markets' expansion at the margin will be due not to an oversupply of funds but to the pressure of demand for funds for fixed investment purposes.

Growth and Inflation

The top half of Table 1 presents, both historically and for the 1977–81 period, five-year average annual growth rates of gross national product, real output, and the overall price deflator. The use of five-year annual averages, upon which the remainder of this analysis also relies, merits some specific comment at the outset. The attempted precision of calculation which economists often employ in shorter-term forecasting is simply not relevant for longer-term projections. Given the possibility or even the likelihood of further cyclical business fluctuations after the current recession and recovery, it is impossible to pinpoint whether any specific year of the late 1970s or early 1980s will experience a boom or a recession. The goal of projections over a future period of five or more years is to characterize a period by describing the conditions which are likely to prevail on average over a succession of years. The analysis of this article necessarily excludes quarter-to-quarter and year-to-year movements of the major economic and financial indicators with which it deals. Indeed, in order to avoid the issues and pitfalls of short-run forecasting, the analysis of this article does not address the developments of recession and recovery during 1975 and 1976, but instead focuses on the 1977–81 period.

This analysis *assumes* that the gross national product of the U.S. economy will increase at an average rate of approximately 9 percent per annum during 1977–81. It further *assumes* that this overall growth rate will represent the combination of an average 3.5–4.0 percent per annum expansion of the economy's real output and an average 5 percent per annum inflation of prices.

The recession of 1974 has already constituted the most severe of the post World War II business fluctuations, and, with the decline in real output continuing into the first half of 1975, this year's real output will be even less than that of 1974. This analysis assumes that, after a rebound of real output in 1976, the economy will achieve a long-run average of 3.5–4.0 percent per annum real growth for the following five years. A growth rate in this range will represent some compromise between the recession-ridden late 1950s and early 1970s (combined average growth rate 2.8 percent) and the more expansion-oriented 1960s (average growth rate 4.4 percent). Given the likely high level of unemployment at the end of 1976, together with the relevant demographic factors during the late 1970s and early 1980s, real economic growth at this pace will result in an average unemployment rate during 1977–81 which will be considerably higher than the 4.6 percent average for the past decade.

Although the assumption of 3.5–4.0 percent per annum real growth is the starting point for this analysis, it is, in a sense, the end point as well. Since the economy is an interdependent whole, the different aspects of its performance must always be mutually consistent. In this analysis, the assumptions about real growth and other factors lead to conclusions about financial markets. These conclusions about financial markets bear implications about the amount of investment which can be undertaken, and investment is itself a fundamental determinant of the economy's overall growth. Just as the economic system jointly determines growth and investment and financial market conditions, in this analysis it is necessary to be sure that the "initial assumptions" and the "conclusions" form an internally consistent whole.

TABLE 1.—GROSS NATIONAL PRODUCT AND ITS COMPOSITION

	1950–54	1955–59	1960–64	1965–69	1970–74	1977–81
Average Annual Growth Rates (Percent Per Annum)						
Gross national product	7.3	5.8	5.5	8.0	8.5	8.9
Real output	4.7	3.2	4.1	4.6	2.5	3.7
Price deflator	2.5	2.5	1.4	3.3	5.8	5.0
Average Composition of Gross National Product (Percent of Total)						
Personal consumption expenditures	64.1	64.1	63.8	62.3	62.8	61.8
Durables	9.3	9.2	9.0	9.6	9.7	9.3
Other	54.8	54.9	54.8	52.7	53.1	52.5
Gross private domestic investment	16.1	15.6	14.6	15.2	15.1	15.8
Plant and equipment	9.4	9.8	9.3	10.5	10.3	11.5
Residential	5.5	5.1	4.5	3.5	3.9	3.5
Inventory accumulation	1.2	.7	.8	1.2	.8	.8
Net exports	.6	.7	1.0	.5	.1	−.2
Government purchases	19.2	19.6	20.5	22.0	22.0	22.6
Federal	12.3	11.3	10.8	10.8	8.9	9.0
State and local	6.9	8.4	9.7	11.2	13.1	13.6

NOTES

Figures through 1974 are data from U.S. Department of Commerce and Board of Governors of the Federal Reserve System.

Figures for 1977–81 are projections based on assumptions about growth of the economy, price inflation, Federal tax and expenditure policy, monetary policy, and other factors as explained in the text.

Detail may not add to totals because of rounding.

The recent experience of price inflation in the United States has been beyond any historical precedent, and economists' inability to forecast price movements accurately during the past several years has become well-known. Furthermore, the location of the inflation has been continually shifting, with first food and raw commodities, then petroleum and derivative fuels, and then basic industrial products leading the upward race of prices. As measured by the overall gross national product price deflator, the U.S. economy's inflation rate was about 5.5 percent per annum in 1973 and 10 percent per annum in 1974. The consumer and wholesale price indices, in which specific high-inflation items such as food and fuel receive greater percentage weights, have risen at even more rapid rates of 12 percent and 21 percent, respectively, from year-end 1973 to year-end 1974.

In view of the severity of the current recession, however, it is unlikely that U.S. prices will long continue to rise as rapidly as they have during 1974. Even after the immediate recovery from the recession, the persistence of slower real growth and greater unemployment than during the 1960s will relieve pressures in many individual product and labor markets. In addition, much of the recent inflation in the United States has probably been due to nonrepeating factors, such as the OPEC countries' massive unilateral increase in the price of oil, the simultaneous emergence of boom conditions in many of the world's major industrialized economics, and some aftereffects of the removal of U.S. wage and price controls.

Nevertheless, the U.S. economy is unlikely to recapture quickly or easily the price stability which prevailed in the 1950s and most of the 1960s. In the near term much depends on the emerging pattern of negotiated wage settlements, as labor attempts both to forestall further job elimination and to recoup its losses after two years of average wage increases significantly below increases in consumer prices. If wage increases are substantial in the forthcoming round of major bargaining sessions, then businesses' efforts to maintain profit margins against rising unit labor costs, once the recession has ended, may retard progress in slowing inflation. In a longer perspective, the momentum of the recovery from the current recession itself will be crucial.

For all of these reasons, the outlook for future price inflation is highly uncertain. Despite the severity of the current recession, however, it is likely that a full transition from the rapid and accelerating inflation of the past several years toward greater price stability may be an extended process. Inflationary expectations, once embedded in the decision-making processes of both businesses and consumers, may subside only gradually, meanwhile leading to actions which render expectations of higher prices at least partially self-fulfilling. This analysis assumes, therefore, that the U.S. economy's rate of price increase, as measured by the gross national product deflator, will average 5 percent per annum during the 1977–81 period.

Compositon of output and spending

Linkages between financial and nonfinancial markets are more complex than simply requiring a total amount of financing to support a total amount of spending. Particular types of expenditures tend to rely heavily on particular forms of financing. Household durables purchases, for example, require consumer credit financing in which both banks and specialized companies participate. Homebuilding depends crucially on the complex of specialized thrift institutions which comprise the mortgage market. Businesses also rely on particular markets, such as those for bank loans, commercial paper, and long-term bonds and equity. As the mortgage market's experiences in 1966, 1969–70 and again in 1974 have clearly shown, these financing relationships at times may be key determinants of individuals' and busineses' ability to undertake specific types of spending. Similarly, the composition of aggregate spending may be a key determinant of developments in financial markets, generating points of pressure where expenditure plans lead to large increases in the demand for funds from specific financial sources.

The bottom half of Table 1 shows the composition of the U.S. gross national product, in the form of historical and projected five-year average percentages of gross national product accounted for by each of several major spending categories. The primary compositional change during 1977–81 is likely to be a continued shift toward fixed investment in plant and equipment. After remaining roughly constant at an average 9.5 percent of gross national product during 1950–64, business fixed investment in the past decade has averaged about 10.5 percent of gross national product. The weakness of fixed investment during the current recession will probably cause a temporary decline in the fixed investment share during 1975 and 1976, but the post-recession economy will reverse this decline. Because of several readily identifiable sources of unusually heavy requirements, the fixed investment share of gross national product is likely to continue to climb during the following five years, averaging some 11.5 percent over the 1975–79 period. Even this enlarged 11.5 percent share will represent a compromise between the demand for plant and equipment investment and the supply of financial capital; were it not for financial constraints, the investment share would be even greater.

The energy industry, broadly defined, will be a significant source of the economy's further move to a greater fixed investment emphasis as exploration, production and delivery activities require large amounts of capital. Even before the recent increase in the price of oil, both the petroleum and the natural gas industries had begun to undertake projects of staggering proportions. The Trans Alaska Pipeline System, which will carry oil from the North Slope to supertanker facilities at Valdez, is already under construction, and the Canadian Arctic Gas Project, which if accomplished will carry natural gas from the North Slope and from the McKenzie River Valley to lower Canada and the United States, is pending approval of the Canadian and American governments. At $6 billion and $10 billion, respectively, these projects represent direct investments of private capital unequaled on a relative scale since the construction of the American railroads. Since the oil price rise, plans for energy industry investment have further accelerated. Exploration in the North Sea and off the coast of the United States, drilling equipment and supertankers will all require vast sums of money. If environmental standards permit it, further development of the American coal industry will also require at least some significant investment. In the 1980s, new technology may render the extraction of oil from shale or tar sands, the gassification of coal, or further development of nuclear energy additional major sources of demand for capital.

Apart from the energy industry per se, other major investment requirements are also apparent. In the wake of the rise in the relative price of oil, many industries will undertake substantial investment for the purpose of shifting operations to alternative energy sources. Pollution control installations are also likely to account for some substantial amount of fixed investment, especially during the early part of the 1977–81 period. In addition, the overall business climate itself will probably lead to more investment in plant and equipment, as companies seek to upgrade productivity in an attempt to hold down unit labor costs in a period of rising wages. In many industries the ever more important pressures of international competition will also be a significant factor in generating this effort. Some industries, such as chemicals and nonferrous metals, will have to make up for lost time after several recent years of unusually small additions to capacity, and in many other industries the current recession itself will leave a large backlog of postponed projects.

The major problem confronting the U.S. capital markets in the remainder of the 1970s wil be the financing of this increase to 11.5 percent of gross national product directed toward fixed investment. In comparison with the investment shares of output in some foreign countries (recently over 20 percent in West Germany and over 30 percent in Japan), the increase from 10.5 percent to 11.5 percent in the United States may seem small. Nevertheless, in terms of the pattern of financial flows in the U.S. capital markets, even this 1 percent increase is likely to lead to adjustments in a number of institutional arrangements. Furthermore, as recently as the early 1960s, fixed investment constituted only 9.5 percent of total U.S. spending. Viewed in this perspective, the rise to 11.5 percent represents almost a one-quarter increase in the share of financial flows which the markets must direct toward the support of business investment in plant and equipment. This problem of *redirection of financial flows* is logically separate from that of *expansion of total flows* (the numbers in the bottom half of Table 1 are percentages of a growing total gross national product), but the markets of course will have to perform both functions simultaneously.

The increasing share of output and spending devoted to business fixed investment will probably produce a somewhat smaller rise in the overall gross private domestic investment share of gross national product, as the movement of another major component of investment, residential construction, will be in the opposite direction. Residential construction will probably decline as a percentage of total spending, as mortgage funds continue to be scarce while many homebuilding markets become more fully developed. Largely because of population trends, the rate of new household formation is decreasing, while nationwide average vacancy rates for both rental and owner-occupied housing are rising. Housing starts will presumably recover from the boom level of over two million starts per year, as was the case in the early 1970s, is highly improbable. As a result, the residential construction share of output will decline from the recent 4 percent to approximately 3.5 percent of gross national product. By contrast, the inventory accumulation share will probably be about the same as its post World War 11 average, as was the case in the early 1970s.

In sum, during 1977–81 gros private domestic investment will constitute 15.5–16.0 percent of U.S. gross national product, a share not seen since the 1950s. It is important to emphasize, however, that this projection does not imply a return to the pattern of requirements for financial flows which characterized the 1950s, since the composition of gross private domestic investment itself will differ sharply during 1977–81 from that of the 1950s. In particular, the coming post-recession years will see relatively more fixed investment in plant and equipment and relatively less residential construction than was typical of the 1950s.

Since the investment share is the aspect of the composition of total spending which bears most clearly on the purposes of this analysis, the other components of the gross national product require somewhat less extensive comment here.

Personal consumption expenditures, especially for durable goods, will become a smaller percentage of gross national product as economic growth and inflation, together with the "bracket effect" of the progressive U.S. federal income tax structure, render disposable personal income a small fraction of

the total. The operation of the "bracket effect" is extremely simple, despite its frequent omission from discussions of medium-term prospects. As inflation continues into higher marginal tax brackets. For example, a family of four which had an income of $13,000 (just above the current national average) and took the standard deduction paid $1.391, or 10.7 percent of its income, in federal income taxes in 1973. If 10 percent inflation had boosted its income to $14,300 in 1974, the same family's federal income taxes would have been $1.666, or 11.7 percent of its income. Hence, a key result of inflation in the United States is that, under the current progressive tax structure, take-home pay becomes a decreasing share of income.

Even if households continue to save the 1965–74 average of 7.2 percent of disposable income, therefore, the fraction of total personal income devoted to consumption will decline in coming years, because the ratio of disposable income to total personal income will decline unless federal tax legislation fully offsets the "bracket effect." In addition, as the discussion below explains, an increase in personal saving as a fraction of personal income will probably be necessary to enable the financial markets to supply adequate capital for the increase to 11.5 percent in the economy's investment share. As a result of both of these factors, the consumption share of gross national product will probably decline to an average of only 61.5–62.0 percent during 1977–81.

Domestic price inflation in the late 1960s, the successive devaluations of the dollar in the early 1970s, and the increase in the price of oil in 1974 have in large part caused unusually severe gyrations in the U.S. trade balance in recent years. Furthermore, the international outlook is now exceptionally uncertain, with the European and Japanese financial systems showing instability at the same time that many of these nations' economies strain to raise the foreign exchange required to pay for their oil imports. Barring the possibility of a major economic depression abroad, the trade balance outlook for the United States depends to a great extent upon the interplay between the prices of agricultural commodities which this country exports and the price of imported oil. OPEC actions seem to confirm the cartel's determination to keep the oil price high by restricting output, thereby maximizing the already staggering flow of OPEC revenues. Hence, unless agricultural commodity prices will equal comparable imports, and so the net exports (exports less imports) component of gross national product will be negative on average during 1977–81.

During the post World War II period, the great expansion of local public services and facilities has rendered purchases of goods and services by state and local governments the most rapidly growing share of total spending increasing from only 7 percent of gross national product in the early 1950s to over 13 percent twenty years later. These purchases will probably continue to increase, both absolutely and as a share of total spending; but the expansion itself will almost certainly be much less rapid than during the past two decades. One reason for the slower expansion is simply that many major social capital installations, such as schools, hospital, roads, and community recreational facilities are already in place; only mass transit looms as a major new expenditure item. A second reason is the recent lower birth rate, which has come after the significant expansion of educational facilities in immediately prior years. State and local governments' purchases of goods and services will probably average about 13.5 percent of total spending during 1977-81, only slightly greater than the 13 percent share in the early 1970s.

A key *assumption* of this analysis is that the federal government will undertake only modest new spending programs during 1977–81, thereby maintaining the goods-and-services purchases (as opposed to transfer payments) portion of federal expenditures at its recent 9 percent share of gross national product. This 9 percent federal purchases share in the early 1970s has been well below the 10.5–12.0 percent which was typical of the previous two decades, as a result of the post Viet Nam decrease in current-dollar defense spending and only a slow increase in nondefense purchases. The assumption of this analysis is that the federal government's purchases will keep pace with inflation and also expand in real terms, but only to the extent of the 3.5–4.0 percent per annum expansion of real gross national product. It is

essential to emphasize that this expansion of real gross national product. It is implying the exercise of considerable discipline with respect to both socially useful programs and military hardware and personnel.

The balance of saving and investment

One of the keys to understanding the functioning of any economy is the truism that, on an ex post basis, the economy's saving must equal its investment. Since it is unlikely in a decentralized market economy that ex ante plans for saving and investment will precisely balance one another, the market mechanism must influence the decisions of business and consumers so as to change these inconsistent ex ante plan into consistent ex post actions. Financial markets play a large role in this mechanism, generating adjustments in the real yield which the market pays to savers as suppliers of funds and in the cost and availability factors which confront those who demand funds to invest in plant and equipment, office buildings, inventories, and residential construction. If plans to supply funds exceed plans to demand funds, the market excess leads to increased availability and a decline in yields. If plans to supply funds fall short of plans to demand funds, the market shortage leads to reduced availability and higher yields. The result is that, ex post, saving equals investment.

Table 2 presents historical and projected five-year averages of net saving and investment flows for the U.S. economy, showing the fundamental equality of gross investment and total gross saving—i.e., gross private saving and the combined surpluses of federal, state and local governments (plus a statistical discrepancy term). The upper half of the table shows these flows as percentages of total gross national product, analogous to the spending shares shown in Table 1. The lower half of Table 2 translates these percentages into average annual flows in billions of current dollars by applying the assumption, discussed above, of 8.9 per annum growth in gross national product for 1977–81.

TABLE 2.—GROSS SAVING AND INVESTMENT

	1950–54	1955–59	1960–64	1965–69	1970–74	1977–81
Average Flows (Percent of Gross National Product)						
Gross private saving	15.2	15.9	15.4	15.9	15.8	15.7
Personal saving	4.9	4.5	3.8	4.5	5.5	4.9
Undistributed corporate profits	3.8	3.4	2.8	3.1	2.8	3.1
Inventory valuation adjustment	−.4	−.3	−0	−.3	−1.2	−.9
Capital consumption allowances	6.9	8.3	8.8	8.7	8.7	8.6
U.S. Government surplus	−.1	.1	−.2	−.2	−1.1	0
State and local government surplus	−.1	−.3	.1	.0	.5	−.1
Statistical discrepancy	.8	.1	−.1	−.3	−.3	−.1
Gross investment	15.8	15.7	15.2	15.4	14.9	15.5
Gross private domestic investment	16.1	15.6	14.6	15.2	15.1	15.8
Net foreign investment	−.3	.1	.6	.2	−.2	−.3
Average Annual Flows (Billions of Current Dollars)						
Gross private saving	51.2	69.6	86.5	128.1	185.5	341.9
Personal saving	16.7	19.7	21.2	35.9	64.1	106.7
Undistributed corporate profits	12.6	14.7	16.0	25.2	32.5	67.5
Inventory valuation adjustment	−1.3	−1.3	−.1	−2.6	−14.0	−19.6
Capital consumption allowances	23.3	36.6	49.5	69.7	102.8	187.3
U.S. Government surplus	−.3	.1	−1.3	−1.9	−13.0	0
State and local government surplus	−.5	−1.3	.7	.2	5.7	−2.2
Statistical discrepancy	2.6	.4	−.6	−2.7	−3.4	−2.2
Gross investment	53.0	68.7	85.4	123.7	174.7	337.5
Gross private domestic investment	53.9	68.3	82.1	122.2	177.6	344.1
Net foreign investment	−1.0	.4	3.2	1.5	−2.9	−6.5

Figures through 1974 are data from U.S. Department of Commerce and Board of Governors of the Federal Reserve Syatem.

Figures for 1977–81 are projections based on assumptions about growth of the economy, price inflation, Federal tax and expenditure policy, monetary policy, and other factors as explained in the text.

Detail may not add to totals because of rounding.

As the analysis above emphasizes, a major key to the U.S. economy's growth over the next decade will be fixed investment for a wide range of basic plant and equipment needs. Such investment is not only a part of the saving-investment link but is also one of the most important "bridges" between an economy's production and financial sectors. Following Table 1, Table 2 indicates that gross private domestic investment will average 15.8 percent of gross national product, or $344 billion per year, during 1977–81. If foreign companies' physical investment in the United States continues to exceed by a small but growing margin the comparable U.S. physical investment abroad, the total gross investment to be financed in the United States will average 15.5 percent of gross national product, or $337.5 billion per year, during 1977–81. Again, wholly apart from the larger dollar magnitudes due to the growth of nominal gross national spending, this investment percentage represents a larger investment financing burden than the United States has experienced since the 1950s.

It is important to recall that the percentages and dollar totals indicated in Table 2 are historical and projected ex post outcomes, representing the end result of the market process which reconciles inconsistent ex ante saving and investment plans. The fixed investment in plant and equipment which business will want to undertake during 1977–81 is probably far in excess of $344 billion per year, but the realities of the financial markets—in particular, a rising real yield on long-term investment funds—will preclude the undertaking of many planned projects. To an unusually great extent, for a country with as well developed capital markets as the United States, in the near future financial considerations may act as effective constraints on the amount of fixed investment which the economy is able to accomplish.

Under normal circumstances, it is reasonable to assume that, in the short run, questions of production of dominate fixed investment planning, with the money and capital markets managing to arrange the financing of whatever investment production requires. The world's money markets in many cases are facing extraordinary stress, however, while the capital markets are in varying states of disarray. At the same time that the U.S. economy faces the prospect of financing a staggering amount of fixed investment, price inflation has made the traditional sources of investment capital wary of long-term commitments. Institutional investors such as insurance companies and pension funds, which are primary purchasers of long-term corporate debt securities, have watched price inflation and rising nominal yields steadily erode the real value of their bond portfolios. In addition, both households and institutional investors have suffered almost a decade of recurring disappointment with the performance of their equity holdings. The current difficulties of the U.S. securities industry, which is itself sorrowfully undercapitalized, have further compounded the problem of investors' reluctance to participate, since the securities industry's inability to make close markets for some stocks and most bonds has rendered these instruments even less liquid and therefore even less attractive to investors.

It is still too early to evaluate fully the seriousness of the capital market's recent and forthcoming problems. Investors' current reluctance to lend to the public utility industry is a useful example to consider in this context, since the utilities' needs for capital to finance the expansion of existing generating facilities and the construction of new ones (including expensive nuclear plants) will continue to be large, despite the decline in the growth rate of electricity consumption. During the summer of 1974 when market conditions were at their worst, even the most creditworthy electric and gas utility companies experienced difficulty in financing. In order to sell debt securities, all but the few remaining triple-A rated companies had to accept terms, such as shorter maturities or ten years of call protection instead of the usual five, which represented concesions to the market. Several widely known and only moderately less creditworthy companies simply could not do their desired financing. In July, Georgia Power, a familiar name in the bond market now rated A by both Moody's and Standard & Poor's, put up for competitive bid $130 million of thirty-year bonds and 600,000 shares o fpreferred stock (par value $100) ; the company received no bids. Also in July, Columbia Gas System, another familiar name now rated A by both Moody's and Standard & Poor's, put up for competitive bid 500,000 shares of preferred stock (par value

$100); the company received a single bid, and that for only 200,000 shares. The Southern Company's successful offering of 17,500,000 shares of common stock in October received widespread plaudits, despite the fact that the net (after subtracting the gross underwriting spread) price to the company of $8.74 per share was only 48 percent of the stock's book value.

The financial markets' current hostility to utilities may be only a temporary phenomenon, reflecting recent market conditions, the dilatoriness of some state regulatory commissions in granting rate relief from increases in fuel costs, or perhaps just the crisis atmosphere which has persisted ever since OPEC's unilateral increase in the price of oil. Alternatively, this aversion to utility securities may be a long-lasting response to fundamental problems such as the utilities' rising debt-equity ratios and declining interest coverage, or their general inability to protect themselves against adverse changes in relative prices. In light of the utilities' requirements for capital to support general expansion, conversion to coal, or nuclear installations, the ability of individual companies to sell equity and long-term securities will be a controlling factor in limiting capital expenditure plans. More than a dozen major utility companies, including Consolidated Edison, Virginia Electric and Power, Detroit Edison and Boston Edison, have already announced deferrals or cancellations of major expenditure programs.

Other industries now face similar problems, though usually in less dramatic form. It is too early to say to what extent the current market disorders and inability of specific companies to finance, both of which have resumed again in the spring of 1975, are a temporary result of the recent climate of rapid shifts in yields. Nevertheless, the profitability remains high that, over the five years following the current recession, explicit financial constraints will be a greater determinant of the basic course of economic events in the United States than has been the case in the post World War II era.

An individual company attempting to raise capital must do so not only in the context of problems which are specific to it or to its industry but also against the overall background of the balance of saving and investment. For 1977–81, Table 2 shows the annual average $337.5 billion of gross investment financed by an average $342 billion of gross private saving, while the federal budget is in balance and state and local governments run a collective average budget deficit of $2 billion per year (the statistical discrepancy is a $2 billion per year subtraction).

In the late 1950s and throughout the 1960s, gross private saving averaged 15.5 percent of gross national product. Business consumption allowances accounted for over half of the total and the rest was divided between personal saving and a generally declining percentage of undistributed corporate profits. In the early 1970s gross private saving averaged the same share of gross national product, but with a different composition. The rapid surge in farm incomes boosted the personal saving rate while a larger amount of reported corporate profits consisted of price increases on inventories of goods in progress. Since busineses must replace these goods at the new higher prices, it is necessary to adjust reported corporate profits by removing inventory valuation profits.

During 1977–81 gross private saving will have to continue to amount to 15.5–16.0 percent of the gross national product so as to finance the rising investment share discussed above. Unless another development comparable to the income distribution shift of the past several years raises personal saving, however, such saving as a share of gross national product will probably fall back from the unusually high level experienced in the early 1970s, despite the inducements which the financial markets will offer to savers. Personal saving will probably be greater in relation to personal income than in any recent period except for the past few years; but, because of the rising fraction of personal income siphoned off into tax payments by that part of the "bracket effect" of the personal income tax which Congress will not remove, personal income will itself be a smaller share of the gross national product. As Table 2 indicates, therefore, a modest increase in reported corporate profits as a percentage of gross national product will constitute the source of increased private saving which will offset the relatively lower personal saving share. An additional source will be a smaller percentage attribution of corporate profits to inventory prices as more companies switch

to last-in-first-out accounting procedures. Unless Congress changes the original-cost basis of the depreciation laws, the effect of rapid price inflation will be a continuing slow decline in capital consumption allowances as a share of gross national product, despite the large amount of investment activity.

State and local governments have run approximately balanced budgets during most of the post World War II period. Largely because of the recent increase in federal transfer payments (grants-in-aid) under the revenue sharing program in the past several years, these governmental unit have collectively run unusually large budget surpluses. In coming years, however, pressures of expenditures for purposes such as pollution control and mass transit, in addition to the need to absorb rising fuel and other costs for general public facilities, will probably outstrip the expansion of state and local revenues. Hence state and local governments, on the average, will probably run a modest (but record) budget deficit of $2 billion per year during 1977–81.

The federal government has run increasingly large budget deficits, both absolutely and as share of gross national product, on average for the past fifteen years. As explained above, a key assumption of this analysis is that federal purchases of goods and services will remain a roughly constant share of gross national product. Because of the "bracket effect" of the federal income tax in times of rapid price inflation, however, federal revenues will increase significantly more rapidly than gross national product. If the total of federal expenditures merely increases in constant proportion with gross national product, as this analysis assumes for purchases of goods and services, the upward thrust of revenues within several years will put the federal budget into a steady and substantial surplus position. It is worth noting that the purchases component comprises only about half of total federal expenditures, and the assumption of an increase in proportion with gross national product is much less appropriate for the transfer payments—such as ocial security, medical care and welfare—which comprise much of the other half. This analysis *assumes*, therefore, that during 1977–81 federal transfer payments will increase more rapidly than gross national product and that tax legislation will continue, even after the recession, to offset some amount of the "bracket effect." The net result of these revenue and expenditure assumptions is the convenient "benchmark" of a balanced federal budget, on a national income accounts basis, during the years under study.

Overall flow-of-funds analysis

The conclusions about total saving and investment discussed above and shown in Table 2 must reflect an underlying pattern of financial flows which not only *increases* the amount of funds raised in financial markets, both absolutely and as a fraction of gross national product, but also *redirects* some of these flows away from their historical arrangements. Tables 3, 4 and 5 present historical and projected five-year average annual financial flows for the United States. The flow totals shown are all net of retirements and other forms of repayment. The flows projected for 1977–81 reflect judgments of the overall result of the market demands, competitive pressures and regulatory structures which are likely to influence the U.S. financial markets during this period, in conjunction with the set of assumptions outlined above.

Table 3 shows the remarkable growth of the U.S. credit markets during the past fifteen years to an average total of $186 billion of net funds raised per year during 1970–74. This overall total is likely to increase still further to an average of $325 billion per year during 1977–81. Because of the need to finance the growing share of business fixed investment, as indicated in Tables 1 and 2, most of this increase will probably occur in the net funds raised by nonfinancial sectors of the economy. A large part of the more modest increase in net funds raised by financial sectors will reflect the efforts of the federally sponsored credit agencies (primarily the Federal National Mortgage Association and the Federal Home Loan Banks) to act as intermediaries in channeling funds into the residential mortgage market.

TABLE 3.—TOTAL FUNDS RAISED IN CREDIT MARKETS, ACCORDING TO BORROWING SECTOR

[Average annual net flows (billions of current dollars)]

	1960-64	1965-69	1970-74	1977-81
Total net funds raised	59.7	97.0	185.8	325.0
By nonfinancial sectors	52.6	81.2	155.6	271.0
U.S. Government	4.5	5.6	15.7	5.0
State and local governments	5.8	8.5	14.3	25.5
Households	21.3	26.4	48.3	89.5
Corporate nonfinancial business	12.7	28.8	56.7	114.5
Other nonfinancial business	5.4	9.0	13.7	22.5
Foreign	2.9	2.7	6.9	14.0
By financial sectors	7.1	15.9	30.2	54.0
Federal credit agencies	1.0	3.7	11.9	22.5
Other financial institutions	6.1	12.2	18.3	31.5

NOTES

Figures through 1974 are data from U.S. Department of Commerce and Board of Governors of the Federal Reserve System.
Figures for 1977-81 are projections based on assumptions about growth of the economy, price inflation, Federal tax and expenditure policy, monetary policy, and other factors as explained in the text.
Detail may not add to totals because of rounding.

Among the nonfinancial sectors, corporate business will absorb the largest increase in total funds raised, followed by households and state and local governments. The primary source of the corporate sector's net credit demands will be the need for capital to finance fixed investment in plant and equipment, as discussed at length above. As usual, households' net credit requirements will largely support both residential construction and purchases of automobiles and other consumer durable goods. Since liquidity and other lending requirements typically lead state and local governments collectively to be net borrows in the credit markets even when their budgets are in surplus, the shift to a budget deficit for this sector will probably lead to a significant increase in its total net credit demands. The modest amount of federal government credit market borrowing shown in Table 3 reflects a small deficit in the unified federal budget due to factors not included in the national income accounts budget. Finally, because of the large sums now collected by oil exporting countries and the increasing likelihood that U.S. financial markets will intermediate a major portion of these countries' financial transfers to countries other than the United States, the projected foreign sector borrowing total shown in Table 3 is probably quite conservative. The current status of "recycling" plans is so unclear that, in the absence of any credible way to predict the course of these oil-related flows, this analysis assumes a significant but still somewhat modest increase in the average amount of net funds raised by foreign borrowers in U.S. markets.

Table 3 decomposes the five-year average totals of net funds raised according to borrowing sectors; Table 4 decomposes the same totals according to lending sectors. In particular, Table 4 shows the sources of the net funds raised—i.e., net acquisitions of credit market instruments—in the U.S. credit markets during the past fifteen years, and indicates the most likely sources of the $325 billion per year in total funds to be raised during 1977–81. As has been the historical pattern, domestic financial sectors will supply the great majority of the funds raised.

The insurance-pension sectors (life and other insurance companies, private pension funds, and state and local government retirement funds) are most important to the analysis of this article. The net volume of credit which these institutions extend will continue to grow steadily, and federal legislation will probably lead to an accelerated growth of private pension funds. Nevertheles, as has been the case during the early 1970s, total net credit extensions by these sectors, which are the preferred purchasers of long-term corporate securities, will not increase sufficiently during 1977–81 (only 64 percent) to offset the increase in net funds raised by nonfinancial corporations (102 percent). As in the early 1970s, therefore, the corporate sector will have to turn elsewhere for a major portion of its financing needs.

67-425—76——13

TABLE 4.—TOTAL ACQUISITIONS OF CREDIT MARKET INSTRUMENTS, ACCORDING TO LENDING SECTOR

[Average annual net flows (billions of current dollars)]

	1960–64	1965–69	1970–74	1977–81
Total net acquisitions	59.7	97.0	185.8	325.0
By domestic financial sectors	52.5	77.1	157.3	263.0
Life insurance companies	6.3	8.4	13.2	22.0
Other insurance companies	1.1	2.0	5.4	8.5
Private pension funds	4.1	5.7	7.3	12.0
State and local government retirement funds	2.5	4.3	8.2	13.5
Mutual savings banks	2.8	3.7	6.7	10.0
Savings and loan associations	10.3	8.6	25.1	34.0
Federal credit agencies	1.2	3.9	12.9	24.5
Commercial banks	16.6	26.3	57.7	104.5
Federal Reserve System	2.1	4.0	5.9	9.0
Finance companies	3.0	4.3	5.9	13.5
Other financial institutions	2.4	5.7	9.0	11.5
By nonfinancial sectors	7.1	19.8	28.5	62.0
U.S. Government	1.8	4.0	3.5	6.5
State and local governments	.5	2.7	1.2	2.0
Households	2.8	10.2	5.6	17.0
Corporate nonfinancial business	.6	1.6	4.1	9.5
Other nonfinancial business	.3	.5	1.0	1.5
Foreign	1.0	.8	13.1	25.5

NOTES

Figures through 1974 are data from U.S. Department of Commerce and Board of Governors of the Federal Reserve System.

Figures for 1977–81 are projections based on assumptions about growth of the economy, price inflation, Federal tax and expenditure policy, monetary policy ,and other factors as explained in the text.

Detail may not add to totals because of rounding.

Corporations will continue to rely on commercial banks to meet much of this gap; banks will do so in part by means of term lending and similar agreements which may serve as substitutes for the long-term capital usually provided by the insurance-pension sectors. This analysis *assumes* that the Federal Reserve System will typically pursue a relatively tight monetary policy during the 1977–81 period, and the projected average $9 billion per year acquisition of credit market instruments by the Federal Reserve, largely via its open market operation, represents less rapid creation of bank reserves than has occurred on average over the past ten years. In this climate the expansion of bank credit will not equal the astounding credit explosion of the first half of the 1970s. Unless the Federal Reserve System either imposes quantitative credit ceilings or reimposes Regulation Q interest rate ceilings for large deposits, however, commercial banks will continue to be able to increase their loans and investments more rapidly than their reserve base increases, primarily by offering adequate yields on certificates of deposit and similar instruments. These yields serve to shift depositors' funds away from more reserve-intensive demand deposits. Hence the banks will again account for much of the shortfall between the growth of nonfinancial corporations' net borrowing and the growth of the insurance-pension sectors' net lending. If intermediating short-term liabilities into longer-term credits creates sufficient tension, banks may seek to develop a different form of liability instrument which can meet the market's demand for ready liquidity and at the same time provide the issuing bank with a firm source of funds.

One further aspect of Table 4's breakdown of credit market activity by lenders merits specific comment in the context of the primary focus of this analysis. In particular, the nonfinancial corporate business sector is unlikely to continue to pare its liquidity as it has done at various times during past years. Prudent financial management in many companies will seek not merely to arrest the decline in liquidity ratios but indeed to rebuild liquidity to more comfortable levels. Hence, nonfinancial corporations will increase on average their net acquisition of credit market instruments, most of which will be short-term liquid assets. Additional aspects of the lending patterns of 1977–81, as shown in Table 4, are the slower growth of net credit extensions by mutual

savings banks and savings and loan institutions, the increased support of these lenders by the federal credit agencies, households' increasing reliance on the credit markets for saving vehicles, and the large foreign financial investment in U.S. markets as a part of oil revenue "recycling."

Table 3 shows the five-year average subtotals of net funds raised by both financial and nonfinancial sectors; Table 5 decomposes the nonfinancial sectors' subtotal according to the specific form of credit market instrument used to raise the funds.

Because of the need to finance the increasing amounts of fixed investment in plant and equipment, a major part of the nonfinancial sectors' increase from $156 billion of net funds raised each year during 1970–74 to $271 billion of net funds raised each year during 1977–81 is likely to take the form of long-term capital instruments. Net issues of equities, including both common and preferred stocks, were very small throughout the 1960s, and stock retirements in many years actually exceeded gross new offerings. Net equity issues increased sharply in the early 1970s, as many companies came under severe pressure to reduce their debt-equity ratios, but then abated in 1973 and 1974 when market developments rendered stock sales unattractive relative to historically familiar prive levels. This pressure has continued, however, and so not equity issues will probably have to increase again in the latter part of the 1970s. Net issues of domestic corporate bonds and commercial mortgages, which have increased significantly throughout the past ten years, will probably increase still further in the coming decade. In addition, because of the increasing volume of maturing issues to be refinanced in the late 1970s, the net figures shown in Table 5 substantially understate the likely increase in gross new issues of corporate bonds. A refunding operation typically has no impact on net funds flows, since bond market investors receive an equal volume of cash at about the same time that the market has to absorb a new issue; but the replacement of outstanding low-coupon bonds with new issues bearing higher coupons can only further erode many companies' interest coverage and further decrease the attractiveness of their debt securities.

TABLE 5.– TOTAL FUNDS RAISED BY NONFINANCIAL SECTORS, ACCORDING TO CREDIT INSTRUMENT

[Average annual net flows (billions of current dollars)]

	1960–64	1965–69	1970–74	1977–81
Total net funds raised by nonfinancial sectors	52.6	81.2	155.6	271.0
U.S. Government securities	4.5	5.6	15.7	5.0
State and local government securities	5.5	8.0	14.8	23.5
Corporate equities (including foreign)	1.1	1.1	7.7	12.5
Corporate bonds	4.1	11.0	15.8	32.0
Foreign bonds	.7	.9	1.1	4.5
Mortgages	21.5	25.0	53.6	98.0
Home	13.0	13.9	30.6	54.0
Other residential	3.0	3.7	8.2	13.5
Commercial	4.2	5.3	11.7	24.5
Farm	1.4	2.1	3.1	6.0
Bank loans (not elsewhere classified)	5.3	12.5	21.2	46.5
Consumer credit	5.7	8.2	13.8	27.5
Open market paper	.6	1.6	3.6	9.0
Other instruments	3.6	7.2	8.4	12.5

NOTES

Figures through 1974 are data from U.S. Department of Commerce and Board of Governors of the Federal Reserve System.

Figures for 1977–81 are projections based on assumptions about growth of the economy, price inflation, Federal tax and expenditure policy, monetary policy, and other factors as explained in the text.

Detail may not add to totals because of rounding.

Those short-term instruments used by the nonfinancial sector which will experience significant increases in average annual volume during 1977–81 include commercial bank loans, consumer credit and open market paper. Even the bank loans, however, are likely to take on an increasingly long-term character as the recent trend toward term lending continues. Because the banks are taking over a portion of the investment financing burden tradition-

ally assumed by the insurance-pension sectors, the increased importance of bank term lending is hardly surprising.

Nonfinancial corporate business

The dominant theme of this analysis is the financing of business investment in plant and equipment; 75 percent of this investment is made by the nonfinancial sector. In addition, nonfinancial corporations typically account for about 65 percent of all profits, 40 percent of all private sector net borrowing, and 80 percent of total private sector bond and equity issues in the United States. Tables 6 and 7 provide a detailed breakdown of the sources and uses of funds for the nonfinancial corporate business sector.

Table 6 presents historical and projected five-year average annual flows which decompose nonfinancial corporate businesses' uses of funds into several categories of physical investment and several categories of financial investment. Investment in plant and equipment is the largest component of these corporations' uses of funds, and the growth in plant and equipment of investment has dominated the growth in their total uses during the past ten years. As discussed above, the growth of nonfinancial corporations' investment in plant and equipment will be even stronger in the years following the current recession and will probably reach an average of $198 billion per year during 1977–81. Nonfinancial corporations' investment in inventories and residential construction is also likely to increase, leading to an average of $222.5 billion per year in total uses of funds for physical investment during 1977–81. Financial uses of funds will probably grow too, as many corporations seek protection against financial market uncertainties by accumulating liquid assets. In addition, the volume of trade credit extended will increase, as those corporations which have ready access to the money markets make arrangements to accommodate those which do not, in an effort to prevent erosion of product sales. Total uses of funds, including both physical investment and financial uses, will therefore grow to an average $282 billion per year during 1977–81.

TABLE 6.—NONFINANCIAL CORPORATE BUSINESS USES OF FUNDS

[Average annual net flows (billions of current dollars)]

	1960–64	1965–69	1970–74	1977–81
Total uses	54.0	95.2	135.2	282.0
Physical investment	43.1	73.8	104.2	222.5
Plant and equipment	37.2	63.2	91.0	198.0
Residential construction	2.0	2.0	4.5	9.0
Inventory accumulation	3.9	8.5	8.7	15.5
Financial investment	10.9	21.4	31.0	59.5
Liquid assets	1.8	2.8	6.6	14.0
Trade credit	6.1	15.1	17.2	33.5
Other financial	3.0	3.5	7.2	12.0
Sector discrepancy	5.7	7.0	11.7	19.0
Total sources	59.7	102.1	146.9	301.0

NOTES

Figures through 1974 are data from U.S. Department of Commerce and Board of Governors of the Federal Reserve System.

Figures for 1977-81 are projections based on assumptions about growth of the economy, price inflation, Federal tax and expenditure policy, monetary policy, and other factors as explained in the text.

Detail may not add to totals because of rounding.

Any sector's total uses of funds plus the sector discrepancy (due to inadequacies of statistical reporting) equals the sector's total sources of funds. The discrepancy for the nonfinancial corporate sector will probably continue its trend-like growth, and so the increase in total sources of funds required will probably continue to be slightly greater than the increase in total uses of funds. During 1977–81 U.S. nonfinancial corporations will probably require an average $301 billion per year in total sources of funds.

Table 7 presents historical and projected five-year average annual flows which decompose the nonfinancial corporate business sector's sources of funds into several categories of internal and external sources. Internal funds have increased only modestly in the early 1970s, as the inventory valuation adjust-

ment has offset an increasing proportion of corporations' relatively stagnant reported undistributed profits. Hence, capital consumption allowances have been the only major source of recent growth in internal funds generation. Internal funds will probably grow significantly rapidly after the current recession, averaging $155 per year during 1977–81, as profits recover sharply and capital consumption allowances continue to increase. Nonfinancial corporations' external sources of funds have grown enormously over the past ten years and will probably grow even more rapidly, averaging $146 billion per year, during 1977–81. Following the discussion above of Table 5, these corporations will continue to increase their volume of net credit raised in both long- and short-term markets. The volume of equity, bond and commercial mortgage issues by nonfinancial corporations is likely to increase substantially during this period. Once again, the net flows in Table 7 substantially understate the impact on corporate financial structures of the probable increase in reliance on long-term debt financing, since the replacement of maturing low-coupon issues by current-coupon issues will be especially frequent for some categories of nonfinancial corporations such as utilities. In the short-term markets, both bank loans and trade debt will be increasing sources of funds to nonfinancial corporations.

TABLE 7.—NONFINANCIAL CORPORATE BUSINESS SOURCES OF FUNDS

[Average annual net flows (billions of current dollars)]

	1960–64	1965–69	1970–74	1977–81
Total sources	59.7	102.1	146.9	301.0
Internal funds	41.2	60.3	74.4	155.1
Undistributed profits	11.5	18.9	21.6	44.2
Profits before tax	45.9	68.6	80.1	163.0
Profits tax accruals (−)	21.4	30.7	35.3	72.7
Net dividends paid (−)	13.0	19.1	23.3	46.1
Repatriated foreign earnings	1.4	2.1	4.0	11.5
Inventory valuation adjustment	−.1	−2.6	−14.0	−19.6
Capital consumption allowances	28.5	42.0	62.9	119.0
External funds	18.5	41.8	72.5	145.9
Equity issues	1.0	.9	7.8	12.0
Corporate bonds	4.1	11.0	15.8	32.0
Mortgages	3.9	4.6	11.8	23.5
Commercial	2.9	3.7	9.3	19.5
Other	1.0	.9	2.6	4.0
Bank loans	2.8	9.5	16.3	36.5
Trade debt	5.3	13.3	13.4	26.0
Open market paper	.2	1.3	1.1	4.5
Other sources	1.2	1.2	6.3	11.4

NOTES

Figures through 1974 are data from U.S. Department of Commerce and Board of Governors of the Federal Reserve System.
Figures for 1977–81 are projections based on assumptions about growth of the economy, price inflation, Federal tax and expenditure policy, monetary policy, and other factors as explained in the text.
Detail may not add to totals because of rounding.

Alternative assumptions

Long-term economic projections may prove inaccurate not only because of the usual short-term uncertainties but also because, over a number of years, both social factors and market structures may gradually shift. Population growth rates, labor force participants rates and basic consumer attitudes are but three of the many major economic determinants which are relatively steady in the short run but which can and do shift over time. Social preferences, technological developments and resource availabilities combine to advance the growth of some industries and products, and to retard others. Basic government policy objectives may change. Institutional arrangements evolve, sometimes rapidly, and often in response to the accumulation of severe economic and financial pressures. Furthermore, financial markets are especially subject to unexpected structural change. Even a very competent ten-year financial outlook, prepared in 1959, may well have failed to foresee such important developments of the 1960's as the negotiable certificate of deposit, the use of bank holding companies, the rise of the mutual fund industry, U.S.

banks' use of the Euro-dollar market, massive periodic disintermediation due to high interest rates, the full development of a market in federal funds, or corporations' increasing reliance on off-balance-sheet financing. The financial flows due to the recent succession of increases in the price of oil, for example, are already leading to the development of a host of new institutions and, in time may effect even broader structural changes.

In the context of these uncertainties, it is only prudent to examine the implications of alternatives to the key assumptions which underlie the projections presented in this analysis. Although it is difficult to prejudge the policy debates of the post-recession years, two such alternatives seem especially relevant for the period 1977–81; (1) a greater commitment to the homebuilding industry and (2) a less conservative federal expenditure policy.

If the federal government chooses to pursue a policy of stimulating residental construction, while the Federal Reserve System holds to the restrictive monetary policy assumed in Table 4, then the federally sponsored credit agencies will be called upon to undertake more loans to thrift institutions and more secondary-market mortgage purchases during 1977–81. Such an increase would enlarge net credit extensions by these agencies beyond the average $24.5 billion per year in Table 4. Since these agencies are only intermediaries, an increase in their level of support for the mortgage market will necessarily imply a net volume of credit market borrowing greater than the average $22.5 billion per year indicated in Table 3, together with increased pressure on the market for medium- and long-term publicly offered debt securities including corporate bonds. If this pressure is sufficiently great, the economy will find it impossible to finance the direction of an average 11.5 percent of gross national product into private fixed investment for plant and equipment during these years.

If federal purchases increase beyond the 9 percent of gross national product assumed in Table 1, or if federal transfers rise faster than revenues, thereby generating a federal budget deficit (while the Federal Reesrve System holds generating a federal budget deficit (while the Federal Reserve System holds to the restrictive monetary policy assumed in Table 4), then during 1977–81 both long- and short-term debt markets will face greater pressure than that described above. The commercial banking system and households will be probable buyers of the net volue of Treasury securities issued to finance this deficit, thereby transferring to the federal government some of the new credit which the nonfinancial corporate business sector will otherwise raise. Indeed, the federal deficit probably need not be very great, in comparison with the historically large deficits of recent years, to create sufficient pressure in the debt markets to prevent the economy from financing the direction of an average 11.5 percent of gross national product to private fixed investment during the 1977–81 period. If the government spending takes the form of fixed investment, for example in the energy or pollution control areas, then government investment will simply replace private investment. If the government spending takes a different form, such as military hardware, then the economy's total amount of investment in productive plant and equipment will probably have to be lower. In either case, any individual private investment project will face an even less favorable business financing climate than the discussion above indicates.

These two examples illustrate the extent to which the conclusion discussed above and presented in Tables 1–7 are sensitive to the several key assumptions which are central to the analysis itself. Particularly for a set of five-year projections, this sensitivity can only introduce a fundamental uncertainty into the analysis, and so it is especially important to be aware of the potential weaknesses, as well as the strengths, of medium-term economic projections. The implication of such uncertainty, however, is not that economic analysis should play no role in medium-term financial planning. On the contrary, its presence makes all th more important the devotion of careful attention to the economic conditions likely to prevail at the time of any significant business financing effort. In addition, a further potential contribution of such medium-term economic analysis can be to identify those pressures to which public policy and/or financial market practices should respond. Such responses of polify or market structure, if they occur, may in turn be the primary sources of the differences between estimates for the future, yielded by the analysis itself, and corresponding developments as they will actually happen.

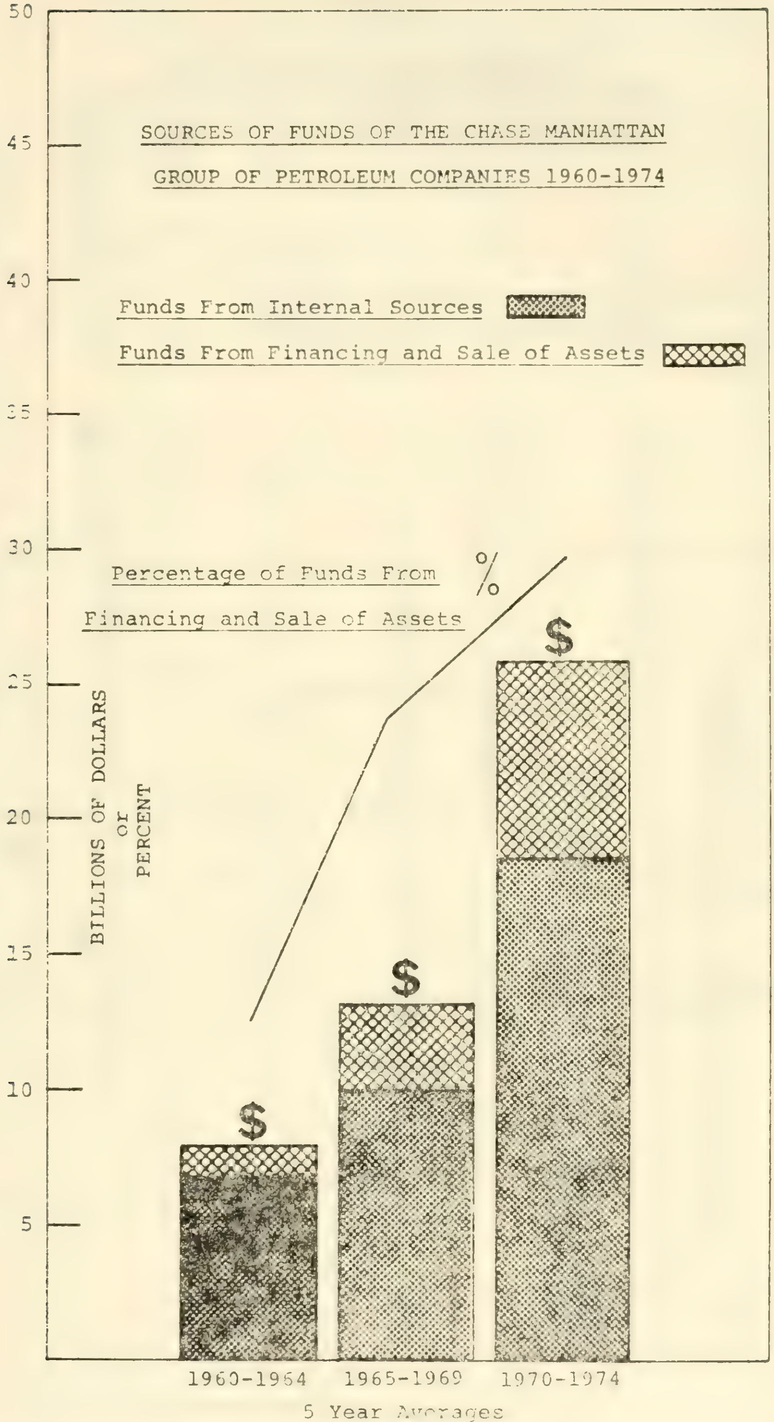
SOURCES OF FUNDS OF THE CHASE MANHATTAN
GROUP OF PETROLEUM COMPANIES 1960-1974
Funds From Internal Sources
Funds From Financing and Sale of Assets
Percentage of Funds From
Financing and Sale of Assets
%
$
$
$
BILLIONS OF DOLLARS
or
PERCENT
50
45
40
35
30
25
20
15
10
5
1960-1964
1965-1969
1970-1974
5 Year Averages

Exhibit III

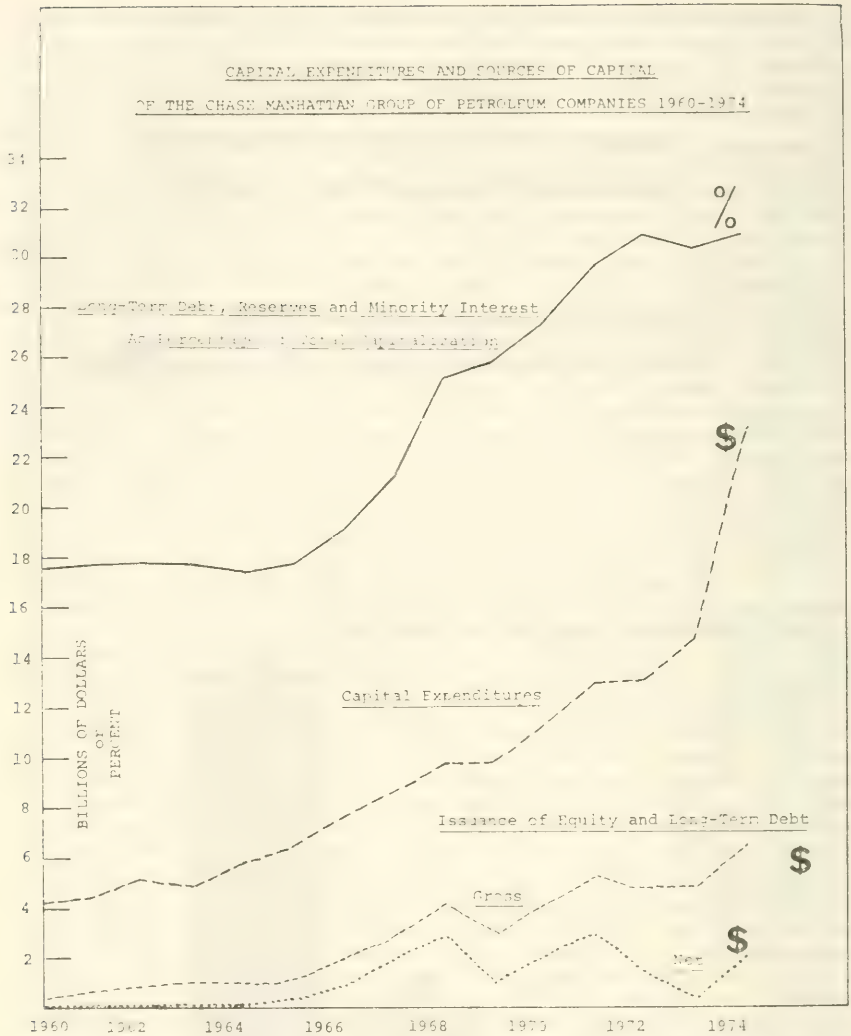
CAPITAL EXPENDITURES AND SOURCES OF CAPITAL
OF THE CHASE MANHATTAN GROUP OF PETROLEUM COMPANIES 1960-1974
Long-Term Debt, Reserves and Minority Interest
As Percentage of Total Capitalization
%
$
Capital Expenditures
Issuance of Equity and Long-Term Debt
Gross
Net
BILLIONS OF DOLLARS
OR
PERCENT
34
32
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
1960
1962
1964
1966
1968
1970
1972
1974

Exhibit IV

Exhibit V

WEEKLY YIELD TO MATURITY COMPARISON FOR SELECTED Aaa/AAA OIL COMPANY LONG-TERM BONDS

Week ended	Exxon Pipeline Co. 9 pct. debits due 2004	Exxon Pipeline Co. 8⅞ pct. debits due 2000	Mobile Oil Co.—7⅜ pct. debits due 2001	Mobile Alaska Pipeline Co.—8.45 pct. debits due 2005	Standard Oil Co. (Indiana) 9.20 pct. debits due 2004	Standard Oil Co. (Indiana) 8[illegible] pct. debits due 2005	Texaco Inc. 7¾ pct. debits due 2001	Texaco Inc. 8⅞ pct. debits due 2001	Average yield
1974									
Nov. 1	8.82		8.54				8.62		8.66
8	8.79		8.49				8.51		8.60
15	8.76		8.43				8.51		8.57
22	8.89		8.54				8.62		8.68
29	8.87		8.60				8.67		8.71
Dec. 6	8.88		8.60				8.67		8.72
13	8.90		8.54				8.62		8.69
20	8.95		8.60				8.67		8.74
27	9.03		8.71				8.67		8.80
1975									
Jan. 3	9.03		8.71		9.05		8.67		8.87
10	8.69		8.31		8.77		8.36		8.53
17	8.83		8.49		8.86		8.46		8.66
24	8.83		8.45		8.84		8.46		8.65
31	8.71		8.29		8.75		8.35		8.53
Feb. 7	8.63		8.21		8.70		8.31		8.46
14	8.69		8.25		8.75		8.31		8.50
21	8.58		8.14	8.42	8.63		8.22		8.40
28	8.60		8.25	8.50	8.72		8.31		8.48
Mar. 7	8.66		8.26	8.48	8.72		8.34		8.49
14	8.81		8.37	8.58	8.89		8.45		8.62
21	8.98		8.69	8.81	9.06		9.65		8.84
27	9.02		8.60	8.88	9.03		8.75		8.86
Apr. 4	9.02		8.66	8.96	9.12		8.85		8.92
11	9.05		8.71	8.93	9.20		8.85		8.95
18	9.00			8.91	9.05		8.77		8.93
25	9.02			8.93	9.08		8.88		8.98
May 2	8.95			8.83	8.99		8.75		8.88
9	8.93			8.86	8.98		8.70	8.90	8.87
16	8.90			8.78	8.94		8.65	8.83	8.82
23	8.94			8.83	8.98		8.73	8.875	8.87
30	8.97			8.84	9.00			8.93	8.94
June 5	8.88			8.71	8.93			8.81	8.83
13	8.76			8.56	8.72	(1)		8.69	8.68
20	8.71			8.54	8.70	8.50		8.67	8.62
27	8.85			8.68		8.61		8.80	8.74
July 3	8.88			8.73		8.61		8.80	8.76
11	8.88			8.73		8.63		8.81	8.76
18	8.88			8.72		8.61		8.80	8.75
25	8.93			8.78		8.69		8.84	8.81
Aug. 1	8.97			8.88		8.80		8.92	8.89
8	9.12			9.02		8.93		9.08	9.04
15	9.17			9.09		8.99		9.17	9.11
22	9.17			9.09		9.02		9.17	9.11
29	9.05			9.01		8.86		9.04	8.99
Sept. 5	9.10			9.05		8.90		9.07	9.03
12	9.20			9.14		9.04		9.16	9.14
19	9.11			9.06		8.98		9.08	9.06
26	9.10			9.09		9.00		9.13	9.08
Oct. 3	9.15			9.14		9.04		9.20	9.13
10	8.98			8.93		8.89		8.97	8.94
17	8.88	8.86		8.81		8.75		8.85	8.83
24	8.86	8.875		8.78		8.68		8.83	8.81
31		8.78		8.73		8.66		8.78	8.74
Nov. 7		8.80		8.73		8.66		8.82	8.75
14		8.85		8.78		8.71		8.85	8.80
21		8.97		8.78		8.84		8.97	8.89
28		8.95		8.81		8.82		8.95	8.88
Dec. 5		8.96		8.88		8.86		8.97	8.92
12		8.96		8.92		8.83		8.97	8.92
19		8.68		8.64		8.56		8.68	8.64
26		8.59		8.55		8.47		8.60	8.55
1976									
Jan. 2		8.62		8.57		8.48		8.64	8.58
9		8.59		8.52		8.43		8.61	8.54
16		8.62		8.52		8.42			8.52

[1] Syndicate.

Source: Internal records of Morgan Stanley & Co. Inc.

WEEKLY YIELD TO MATURITY COMPARISON FOR SELECTED Aaa/AAA NON-OIL COMPANY INDUSTRIAL LONG-TERM BONDS

Week ended	E. I. duPont de Nemours & Co.—8.45 pct debits due 2004	General Electric Co.—8½ pct debits due 2004	General Motors Corp.—8⅝ pct debits due 2005	The Proctor & Gamble Co.—8¼ pct debits due 2005	Warner-Lambert Co.—8⅞ pct debits due 2000	Average yield
1974						
Nov. 1		8.57				8.57
8		8.51				8.51
15		8.44				8.44
22		8.57				8.57
29		8.52				8.52
Dec. 6		8.55				8.55
13		8.44				8.44
20		8.46				8.46
27		8.55				8.55
1975						
Jan. 3	8.57	8.59				8.58
10	8.31	8.29				8.30
17	8.43	8.38				8.41
24	8.43	8.40				8.42
31	8.31	8.34				8.33
Feb. 7	8.29	8.26				8.28
14	8.36	8.33				8.35
21	8.24	8.20				8.22
28	8.36	8.27				8.32
Mar. 7	8.36	8.35		(1)		8.36
14	8.47	8.44		8.40		8.44
21	8.71	8.69	(1)	8.59		8.66
27	8.73	8.69	(1)	8.62		8.68
Apr. 4	8.71	8.68	8.78	8.62		8.70
11	8.75	8.68	8.82	8.67	8.88	8.76
18	8.75	8.68	8.82	8.67	8.82	8.75
25	8.80	8.74	8.85	8.72	8.875	8.80
May 2	8.71	8.64	8.77	8.62	8.82	8.71
9	8.70	8.64	8.75	8.62	8.79	8.70
16	8.63	8.59	8.71	8.58	8.71	8.64
23	8.66	8.65	8.75	8.62	8.75	8.69
30	8.70	8.69	8.78	8.62	8.75	8.71
June 5	8.57	8.57	8.66	8.53	8.70	8.61
13	8.45	8.44	8.55	8.35	8.56	8.47
20	8.43	8.42	8.53	8.33	8.53	8.45
27	8.54	8.52	8.625	8.47	8.68	8.57
July 3	8.57	8.53	8.625	8.46	8.68	8.57
11	8.53	8.52	8.61	8.48	8.68	8.56
18	8.54	8.52	8.65	8.46	8.65	8.56
25	8.61	8.59	8.68	8.55	8.68	8.62
Aug. 1	8.71	8.72	8.81	8.66	8.85	8.75
8	8.77	8.84	8.94	8.80	8.94	8.86
15	8.96	8.91	9.01	8.80	8.98	8.93
22	8.95	8.90	9.01	8.90	8.98	8.95
29	8.82	8.77	8.90	8.80	8.88	8.83
Sept. 5	8.86	8.81	8.93	8.82	8.90	8.86
12	9.01	8.96	9.06	8.90	8.98	8.98
19	8.93	8.89	9.03	8.85	8.93	8.93
26	8.91	8.87	9.00	8.82	8.93	8.91
Oct. 3	8.93	8.89	9.01	8.82	8.98	8.93
10	8.69	8.64	8.78	8.60	8.82	8.71
17	8.58	8.54	8.66	8.49	8.70	8.59
24	8.58	8.54	8.67	8.46	8.70	8.59
31	8.54	8.50	8.625	8.43	8.65	8.55
Nov. 7	8.54	8.52	8.65	8.46	8.68	8.57
14	8.63	8.57	8.69	8.53	8.70	8.62
21	8.74	8.69	8.81	8.64	8.85	8.75
28	8.74	8.67	8.78	8.64	8.85	8.74
Dec. 5	8.74	8.68	8.79	8.64	8.82	8.73
12	8.74	8.68	8.79	8.64	8.82	8.73
19	8.45	8.41	8.51	8.34	8.53	8.45
26	8.39	8.33	8.36	8.27	8.48	8.37
1976						
Jan. 2	8.39	8.33	8.45	8.28	8.48	8.39
9	8.37	8.31	8.44	8.27	8.48	8.37
16	8.36	8.31	8.44	8.25	8.48	8.37

[1] Syndicate.

Source: Internal records of Morgan Stanley & Co. Inc.

Exhibit VI

AN ANALYSIS OF THE PRICE EARNINGS RATIOS OF SELECTED OIL COMPANIES FOR THE 10 YR ENDING 1974 RELATIVE TO THE STANDARD AND POOR's COMPOSITE INDEX

Ranking fortune 500		1695	1966	1967	1968	1969	1970	1971	1972	1973	1974	Average 10 yr 1965–74	Average 5 yr 1965–69	Average 5 yr 1970–74
	Absolute Price Earnings Multiple [1]													
18	Atlantic Richfield Co	12.8	12.2	13.5	24.0	25.4	18.6	18.2	18.6	18.9	11.2	17.3	17.6	17.1
16	Continental Oil Co	17.4	13.1	13.9	12.8	11.7	8.5	11.6	9.7	8.5	6.4	11.3	13.8	8.9
1	Exxon Corp	17.1	14.2	11.7	12.8	12.6	10.4	11.0	11.5	8.6	5.5	11.6	13.7	9.4
7	Gulf Oil Corp	13.7	11.2	12.6	13.5	13.0	10.3	10.8	12.1	6.0	3.8	10.7	12.8	8.6
5	Mobil Oil Corp	14.1	12.1	11.7	12.6	12.6	9.9	9.9	11.1	7.1	4.2	10.5	12.6	8.4
25	Phillips Petroleum Co	14.4	12.5	12.3	18.6	17.7	16.2	17.1	17.9	18.2	9.1	15.4	15.1	15.7
14	Shell Oil Co	16.2	14.8	14.7	14.3	13.3	12.2	13.2	13.2	11.5	5.6	12.9	14.7	11.1
6	Standard Oil Co. of California	14.4	12.9	12.0	12.1	11.5	8.7	9.4	10.5	7.3	4.0	10.3	12.6	8.0
13	Standard Oil Co. (Indiana)	14.7	13.2	14.1	13.5	12.7	9.8	13.9	13.9	12.2	6.6	12.5	13.6	11.3
4	Texaco, Inc	17.0	14.1	13.7	13.2	12.7	9.6	10.4	10.5	7.2	4.5	11.3	14.1	8.4
	Total											12.38	14.06	10.69
	Multiples Relative to the Standard and Poor's Composite Index [2]													
	Atlantic Richfield Co	76	81	81	141	150	116	106	108	145	123	113	106	120
	Continental Oil Co	104	87	83	75	69	53	67	56	66	70	73	84	62
	Exxon Corp	102	94	70	75	75	65	64	67	66	60	74	83	64
	Gulf Oil Corp	81	74	75	79	77	64	63	70	46	42	67	77	57
	Mobil Oil Corp	84	80	70	74	75	62	58	65	55	45	67	77	57
	Phillips Petroleum Co	86	83	74	109	105	101	99	104	140	100	100	109	91
	Shell Oil Co	96	98	88	84	79	76	77	77	88	61	82	89	76
	Standard Oil Co. of California	86	85	72	71	68	54	55	61	56	44	65	76	54
	Standard Oil Co. (Indiana)	87	87	84	79	75	61	81	81	94	72	80	82	78
	Texaco, Inc	101	93	85	78	75	60	61	61	55	49	72	86	57
	Total											79.3	86.9	71.6

[1] Annual ratios are based on average price for the year and the full years earnings.

[2] Based on the absolute price/earnings ratio given for each company and the average price/earnings ratio of the Standard and Poor's Composite Index for the corresponding time period.

Exhibit VII

COMPOSITION OF OWNERSHIP OF THE 6 LARGEST U.S. OIL COMPANIES[1]

	Number of shares held (millions)	Percentage of total
Individuals	595	57.0
Estates, individual trusts, and common trusts	162	15.5
Retirement plans and profit sharing funds	93	9.0
Foundations and charitable and educational institutions	76	7.0
Investment companies, brokers, and securities dealers	42	4.0
Insurance companies	35	3.5
Other	42	4.0
Total	1,045	100.0

[1] Information provided by the American Petroleum Institute. Companies included: Exxon Corp., Gulf Oil Corp., Mobil Oil Corp., Standard Oil Co. of California, Standard Oil Co. (Indiana), and Texaco Inc.

Exhibit VIII

SUMMARY OF SALES BY TYPE OF INSTITUTION OF HIGH-GRADE, LONG-TERM PETROLEUM CO. DEBENTURE ISSUES

Institutions	Exxon Pipeline—9 pct due 2004 (thousands)	Mobil Alaska Pipeline—8.45 pct due 2005 (thousands)	Texaco Inc.—8⅞ pct due 2005 (thousands)	Shell Oil Co.—8¾ pct due 2005 (thousands)	Standard Oil Co. (Indiana)—8⅜ pct due 2005 (thousands)	Total	
						Thousands	Percent
Insurance companies:							
Life	$21,795	$12,480	$15,035	$21,727	$19,870	$90,907	6.5
Other	5,610	9,430	1,750	1,580	23,020	41,390	3.0
Nonprofit organizations	9,725	8,922	8,345	8,430	8,605	44,027	3.1
Savings banks	6,937	19,286	21,495	21,020	31,025	99,763	7.1
Commercial banks[1]	90,562	103,265	97,465	68,104	91,725	451,121	32.3
State and municipal pension funds	65,560	74,260	95,002	72,086	46,675	353,583	25.4
Corporations	6,755	12,060	11,600	12,590	8,010	51,015	3.6
Investment trusts	17,253	28,115	32,320	32,640	42,890	153,218	11.0
Individuals	16,135	15,266	9,696	10,597	13,136	64,830	4.6
Dealers and others	9,668	16,651	6,822	1,092	14,766	47,852	3.4
Total	250,000	300,000	300,000	250,000	300,000	1,400,000	100.0
Offering date	11-17-74	2-19-75	5-6-75	5-15-75	6-12-75		

[1] Primarily corporate pension funds and individual trust funds managed by banks.

Senator HRUSKA. Well, thank you for your statement.

You were present here in the committee room, Mr. Gary, when there was the colloquy between Mr. Bator and myself, were you not?

Mr. GARY. Yes, sir; I was.

Senator HRUSKA. So you heard his statement and also questions and observations the chairman indulged in and his replies thereto?

Mr. GARY. Yes.

Senator HRUSKA. Would you say, considering the analogy given by and the differences between the Senate Oil Act of 1911 and the Holding Company Act of 1935 and any other divestiture operations engaged in, in America, would you say that this would be as a proposal to the S. 2387 or a new precedent, a new departure in fields that have not heretofore been tried?

Mr. GARY. Very much so, sir. When we accepted this assignment to study this matter, indeed, I went through and read the history of the 1911 divestiture and members of Mr. Bator's firm briefed me

on the Public Utility Holding Company part and I came to the same conclusions that were mentioned. But in both of those cases, they turned out not to be useful for us because we found that they were so different from what is contemplated here that I finally stopped studying them. What we found in the 1911 case has already been mentioned; that the companies were geographically situated and it was, in effect, as I could understand it, a geographical divestiture of companies that were already going concerns in their own neighborhoods.

At that stage the oil industry was nothing like the complexity it is now and those companies really were able to continue in their business without substantial interruption and, in fact, without a great deal of confusion, because they were able to contract with suppliers in much the same fashion as they had conducted their business. I noted, also, the point that the parent oil company had no debt, so it was not under any difficulties, which all of these parent oil companies will have. Now, interestingly enough, at the time in the early 1900's when that trust was built, the debt—to the extent there was debt—was put on the operating companies. So, when they were spunoff, they just spunoff and went right into business. You were not abrogating contractual arrangements with lenders. I did not find any but the book was not written by a financial man. With regard to the Public Utility Holding Company Act, I really did not study it after I found that, in fact, it was only the superstructure that was being worked on.

The operating utilities were, again, going concerns franchised in their local markets and perfectly capable of carrying on on their own, with their own management.

I noted, also, when I was studying that material, that it came at a time when there was not large capital demands for expansion, particularly during the Depression and the war. One of the points I did not bring out in my oral summary is that the petroleum industry is really, even without this legislation, going to have a hard time meeting its capital demands. And that is why we say that the impact of this legislation could be disastrous.

Senator Hruska. You have testified that at best, even with our present structure, that intricate machinery and the extensive machinery within the sum total of the petroleum industry and all of the entities, even at best, more and more for capital investment and for expansion and development, exploration, research, and development, and so on, the companies are forced to resort in increasing percentage to external capital as opposed to internally generated funds to be reinvested.

Is it fair to say that with that degree of difficulty, insipient though it is, is sufficiently grave that if there were imposed upon that picture any of the inhibitions and prohibitions as contained in S. 2387, that it would be a total impossibility to get that job done?

Mr. Gary. Yes, sir. That may be understated. Interestingly enough, when we ran these statistics over the division between internally generated funds and externally generated funds, we found that prior to 1960, virtually 90 percent of petroleum company financial requirements came from internal sources, depreciation and depletion. And only 10 percent had to be raised in external markets.

Senator HRUSKA. When was this? What period?

Mr. GARY. Prior to 1960, in the late fifties. Then that percentage began to decline, and for the latest 5 years I think it turns out to be 72 percent for the group of 29 companies that Chase studies. That sounds like only an 18 percent decline from 90 to 72, but the percentage increase in the demands on capital markets is exponential. And so the latest year that we have in reliable statistics, we have seen that the petroleum industry financings in the capital market have been over $6 billion. And that was 1974.

In 1975 it is bound to have been higher:

One: Because the earnings were less.

Two: Because they did not have the inventory profits that were there in the proceeding year; and

Three: Because the Trans-Alaskan Pipeline System and the North Sea, particularly, have been big eaters of capital. So that even under the present situation, we expect the demand will get even greater on capital market.

You know, we used to be in the business of selling bonds and the client said, Well I want to sell so many millions in bonds and we said, Ok. My partner, John Wilson, can talk about this some, too. Our clients do not say that anymore. They come in and they say: What is the biggest issue you can do in the capital market? What is the biggest issue that can be done? They all say that now. And we get pretty uncomfortable about it.

And some of the projects that they ask us to work on now are multiples of billions of dollars. They have had to go into these things and joint ventures in order to share the costs and be able to spread it around.

Senator HRUSKA. If S. 2387 were enacted can the Trans-Alaska pipeline for natural gas be built without Government financing?

Mr. GARY. The costs have gone up so far and it has been delayed so long, I am not sure it can be built even in the private sector now even with this bill. It is right at the end.

Senator HRUSKA. Can the Trans-Alaska oil pipeline continue to function if S. 2387, with all of its prohibitions and all of its long-term agreement prohibitions, contracts were canceled, would there be a danger of its not being able to function?

Mr. GARY. I would guess that there would be severe danger that it would not be completed.

Senator HRUSKA. Well, as long as it is completed, they would have to do away with those agreements, those throughput agreements, to which you referred, and those commitments to the guarantee of the debt by the respective parent company, and any direct or indirect control by any of the other component elements of the petroleum industry. All of that is scrubbed; that is out of the picture. Now, having that in mind, can it continue to operate?

Mr. GARY. I do not know whether it would or not. When I think about the prospect of events of default occurring in billions of dollars worth of bond issues, which events would permit acceleration, I am aghast, frankly. And whether or not the owners could operate it for a while, I do not know. But what I do know is that if this were to pass tomorrow, then I do not think it would be completed even; much less start operations.

Senator HRUSKA. You were here when I interrogated Mr. Bator about the pipelines and their place in the petroleum industry. Is there really a problem with the pipelines now, considering the fact that they are common carriers?

Mr. GARY. No.

Senator HRUSKA. Considering the fact there are no complaints that there is discrimination in the availability of their capacity; considering the fact that their rates have increased very slightly percentagewise and per unit, of servicing, the transportation, and all the other elements that I mentioned to Mr. Bator. Are the pipelines really any factor whatsoever? Is there any trouble with them in the field of repressing or suppressing competition in the petroleum industry?

Mr. GARY. No, sir. They are a great boon to the American consumer, as a matter of fact. I have worked on pipeline financing almost all of my business life and I know that other testimony to which you were referring, because I had a part of writing a great deal of it. And I think I can say positively, that they are a very cheap form of transportation from which the consumer benefits in the long run.

And they are very highly regarded by investors simply because of the reasons you cite, that their cost has not gone up. There have been, I believe, almost no complaints about access to the pipelines. They are common carriers. They are subject to the Elkins Act Consent Degree, and they operate very smoothly and efficiently, and investors like pipeline bonds, as a matter of fact.

Senator HRUSKA. For the purpose of the record, would you describe briefly the Elkins Degree to which you referred? As it applies to this particular question.

Mr. GARY. Well, the Elkins Act Consent Decree, December 1941; it was the one that was being discussed a little earlier, wherein shipper-owner oil companies agree with the Justice Department that dividends on subject pipelines would not be in excess of 7 percent of ICC valuations. That is, the dividends cannot be paid out in excess of 7 percent of ICC valuations. And if earnings exceeded that amount, they had to either be reinvested in the system and such reinvestment would not add to the ICC valuation.

It has represented a top limit on the amount that the oil companies can earn from pipelines in corporate form and, in fact, is the reason why oil companies have had to resort to the practice of leveraging pipeline financings up to very high numbers, as distinguished from the lower debt-equity ratio for operating concern?

Senator HRUSKA. You state in your prepared statement that the advocates of this legislation are really proposing something that is quite drastic. Your language in that regard is "What the divestiture opponents have in effect proposed is the end of all new pipeline construction and a voiding of the security behind many existing pipeline financing." That is pretty drastic, is it not?

Mr. GARY. Very strong, and I deliberately would not allow any of my conferees to introduce any qualifiers into that sentence.

Senator HRUSKA. There was another sentence in the concluding sentence of your statement that is rather jarring. I'm quoting:

> The Congress must realize that if America's oil industry is torn asunder under this bill, if the contractual rights of petroleum company debt holders

are abrogated, and if the basic credit strength of the industry is dissipated, the decision will be irreversible. The strength of our vertically integrated oil industry is not something that Congress or anyone else will be able to restore.

That's a pretty sweeping statement, Mr. Gary.

Mr. GARY. It is very sweeping, but it is done so deliberately, because I suspect that the framers of this legislation did not appreciate that once investors had been burned badly, and they will be burned badly by this legislation, they do not come back again. It takes them years. They expect to see sustained stability, earning power, strength of asset protection, all the things they look for as fiduciaries when making loans. And once it has been destroyed, they are going to be very fearful. And they are going to be very unlikely to put any more good money after the bad.

Senator HRUSKA. Have you considered any of the constitutional limitations upon some of the consequences of S. 2387 if it ripened into statute? Those are impairments of contracts, for example. Those are the taking of property without proper remuneration, and so on.

Mr. GARY. I am not a lawyer, but I can tell you, as a fellow that sells bonds, that a lot of lenders are going to think that they were very badly dealt with constitutionally, and they are going to be marching off to court. That's why I feel fairly safe to say that they are not going to be putting any more money in.

Senator HRUSKA. Well, has the general counsel for your company gone into this, or anyone else in the investment field? I would think that's one of the basic considerations. Is it thought that the practical obstacles and total workability of this plan are so great that you do not have to go into the field of constitutional prohibitions?

Mr. GARY. Yes, sir, by the way, my counsel is sitting right here on this matter. That is right. I think the business implications are so disastrous that I did not, as a banker, feel that it was necessary even to dwell upon constitutional aspects of it.

Senator HRUSKA. You have found much fault with this bill, Mr. Gary. Give us your suggestions as to how we can amend the bill so that it can go forward and become law and result in fair and equitable treatment for everybody concerned without any loss of production of petroleum products, without any obstruction to the needed expansion for additional sources of petroleum. Can you give us some idea of the amendments you would like to propose, and still have a bill of divestiture here?

Mr. GARY. Well, I like that one that was suggested before, by striking out everything. [Laughter.] If you have got a moment, I am reminded of a remark made to me by an oil company executive that I have worked for for many years. He said to me:

> You know, the oil business is very simple. People complain about how complicated it is, and difficult to do business these days. But it is very simple. There are only two things you have to do. A lot of others are desirable to do, but there are only two things you have to do. One is to find oil and I will find the oil.

Senator HRUSKA. Economics of this scale would disappear under this plan, would they not?

Mr. GARY. Yes, sir.

Senator HRUSKA. They would not disappear for our foreign competitors.

Mr. GARY. I think they would be overjoyed by this legislation.

Senator HRUSKA. They would find an additional customer for a greater percentage of our consumption of petroleum products in America if this bill passed. Is that a fair conclusion from the testimony you have given?

Mr. GARY. Yes, sir.

Senator HRUSKA. Mr. Bangert, have you any questions?

Mr. BANGERT. Dr. Measday has a few questions.

Senator HRUSKA. Yes, Dr. Measday?

Dr. MEASDAY. Thank you, Mr. Chairman.

Mr. Gary, you have described, probably accurately, the tremendous risks faced by the Trans-Alaskan Pipeline, even without divestiture. Now, if this line should not be completed, would this put a very serious strain on the resources of Sohio and BP, given the other capital needs which they are faced with in other areas of operation?

Mr. GARY. The British Petroleum Co. would be less affected than Sohio, certainly. They are an international major—they operate in most of the countries of the world. Their operation in the United States is through Sohio.

Is the premise of your question, if the line were not completed?

Dr. MEASDAY. Yes; which is one of the risks you mentioned.

Mr. GARY. One of the provisions of the loan agreement for this private placement that I was telling you about is that it would eventually constitute an event of default if the pipeline were not completed. And that event of default has very severe consequences, both for Sohio and BP.

If, eventually, it resulted in an acceleration of the debt of Sohio and in the meantime they had not been able to do anything else to realize upon their investment in crude oil, it is conceivable that they could go bust; yes.

Dr. MEASDAY. Well, under the circumstances, then, is it really advisable to place the securities with the life insurance companies, private and public pension funds, savings banks, and other institutions with very serious fiduciary responsibilities if the risks are as great as you say they are?

Mr. GARY. The people you mentioned are those that constitute the capital market of this country.

Dr. MEASDAY. Yes. This is my question.

Mr. GARY. Is the question rhetorical, or—I'm not sure.

Dr. MEASDAY. No. Seriously, are not these institutional investors, then, taking on a tremendous risk?

Mr. GARY. Institutions do not take business risks. They take credit risks, and this is a credit risk that they evaluated and took the risk, the credit risk. They don't take business risks.

Dr. MEASDAY. But you feel, generally, I think, that the security that has been built into these agreements is enough to protect the investors?

Mr. GARY. Yes, sir. Understanding the dynamics and economics of the situation, there are a lot of barrels of oil up there in Alaska, and they have a very great value. Now it is the realization of that value that makes Sohio a viable going concern.

Dr. MEASDAY. Right. You are confident, though, yourself that it will pay off?

Mr. Gary. Yes, sir.

Dr. Measday. So am I, and I am not quite sure that the risk is quite as great as those you have depicted. Now, just one other point.

On the dividend limitation, under the Elkins Act Consent Decree. This is 7 percent of ICC valuation, which in a period of deflation is higher than the financial assets, and the pipelines generally. But at 7 percent on the entire base, by the time you account for the leverage, it comes up to a very, very satisfactory return on equity, does it not? I think in 1973 the average return on equity for ICC lines was about 17½ percent, which was much better than the oil company did in the rest of their businesses.

Mr. Gary. Well, I am chuckling a bit, because my associate, Mr. Haythe, and I went to Alaska, to Juneau, once, to testify on this question. We thought we went for 1 day, but we got snowed in, and we spent 5 days with the entire legislature and the senate of the State of Alaska on this point. And they were holding hearings on this and other matters. And there had been some very, I think, irresponsible talk about the return on equity for pipelines.

In the prepared testimony, we go into a little more detail. I could give you a great deal more detail if you would like me to explain this matter. But an oil company involvement with a pipeline is its share of the total cost of the system, not just its equity. You will recall I mentioned that there are really two ways in which pipelines are organized in this country. One is in the form of undivided joint interest systems, and they go directly into the assets of the oil companies and they are financed by the oil companies, just as is any other item in their capital budget, through the whole range of resources open to the oil company—their internally generated funds, their debt, equity, et cetera. And, as such, they are integrated into the oil company. In pipelines that are organized in corporate form, you have to apply this bunch of agreements that we were talking about to completion agreements and the throughput agreements, and assign them to the benefit of lenders.

And as we have tried to point out in these prepared statements, these undertakings under these agreements are in the last analysis, undertakings to put up money. They are called technically cash deficiency agreements, under which the shipper oil company covenants that, regardless of what else has happened, if, at the end of an accounting period there isn't enough cash around to pay all the liabilities due and payable, then he will put up that money. Now, that is a use of his credit, as much as any other use. And the extent to which he has used it there, he does not have it available to use somewhere else.

Now, I also mentioned the Elkins Act Consent Decree, which forced pipelines, in order to get reasonable return, to leverage themselves up in the pipeline sector. If you put it into the pipeline sector and still are going to maintain a reasonable corporate financial structure in the rest of the company, you cannot use it somewhere else. So, I think it is misleading and I think this committee has been misled a number of times by witnesses who have looked to return on equity. It just isn't appropriate under the circumstances.

Dr. Measday. On the cash deficiency agreements, some of the owners have explored a course in the first few years of operations,

have had to come through on those for transportation purposes, but do you know of any other lines or any other major pipelines which have been operating, let's say, for 4 or 5 years, in which owners have had to make up cash deficiencies?

Mr. GARY. Yes. I know of one. It's quite a small system in the Four Corners area. In fact, they overbuilt the system in the expectation that there would be more discoveries in the area than there turned out to be. There was an initial flush of discoveries that started a fair amount of enthusiasm, and the builders of the system were fairly well convinced that, in the ensuing years, which would have been the late fifties, that there would be more discoveries.

In fact, they did not turn out, and so, by the time they had built the system, which runs west from the Four Corners area to the west coast, they had built into the system a fair amount of overcapacity. Now, I believe those bonds are almost all paid off, but I also believe that perhaps to some extent the cash deficiency clause may have had to be implemented in that system. But other than that, I am not aware of one that has not been running pretty well.

Dr. MEASDAY. Historically, though, this has been very risky for the shipper-owners.

Mr. GARY. Well, after all, you know, they pay the tariffs.

Dr. MEASDAY. Oh, yes.

Mr. GARY. It's in one pocket and out the other.

Dr. MEASDAY. But they get the dividends. The dividend is their own internal cash flow. One other thing I would like to get into before you go, Mr. Bator.

You talked about the tremendous complexity of restructuring, although it seems to me an awful lot of corporate restructuring is going on all the time. I would like to just give one example involving Pennzoil, where Pennzoil acquired United Gas in April of 1968. There were, as I recall, about 11 outstanding issues of United Gas debt which had to be exchanged. The United Gas stockholders got some kind of accumulated preferred common stock in the surviving company.

Mr. GARY. Did the surviving company assume the old debt?

Dr. MEASDAY. Apparently, as I understand it, these were exchanged for new issues, new issues of debt, except for about three-quarters of it. About three-quarters of it was exchanged, 80 percent, maybe. The surviving company established an escrow fund with the trustee. In 1969, Pennzoil had to sell off the St. Petersburg retail operation. In 1970, they spun off the other retail operations of United Gas in Texas. In 1974, they spun off the pipeline operation.

These involved tremendous shifts of assets and securities. And isn't it conceivable that all of the problems that you have raised regarding bond covenants, or most of them, bond covenants and ventures, things like this, had to be faced and met by Pennzoil, first, in putting together an awful lot of corporate assets and liabilities into an envelope, and then, within 6 years, unscrambling that? But it was done successfully, and all of the survivors are alive and well at this point.

Mr. BATOR. Can I comment?

Dr. MEASDAY. Yes.

Mr. BATOR. Dr. Measday, I am not particularly familiar with the Pennzoil United Gas. I do not know what was involved. I am sure it was difficult and complicated, obviously. And I do not know whether that was a judicially required divestiture or whether they just decided to do it for internal reasons. There have been similar ones—two of the Bell Telephone subsidiaries, Southern Bell and Pacific, sort of divided themselves into two for, I think, principally regulatory reasons.

It can be done. And the measure of difficulty can vary enormously, company to company. As I say, I am not familiar, specifically, with the Pennzoil. But another one, perhaps, in point that I know a little about is the El Paso Northwest, where, I think, the final order from the Supreme Court requiring divestiture came in 1964. And I believe they completed in about 1972 or 1973. Now, again, there, for example, they restructured that. They did it with the consent of the bondholders. They spun off Northwest Pipeline, and Northwest Pipeline, in effect, took over some, I think, $200 million worth of debt from the parent company.

The creditors, operating under the indenture, consented, presumably by a two-thirds vote as required, to have the subsidiary do that. They got something in return. They had to, I think, agree to pay an extra one-eighth of 1 percent interest as a quid pro quo for the consent of the creditors to agree to the reorganization. The Loew's thing took 7, and a relatively simple one. I am sure there have been others that have been longer and shorter.

But I think what you have got to face, with this one, though, is you are going to have 20 companies, with $146 or $148 billion in assets, all of them at the same time—probably on the 365th day of the date of enactment—coming in with these plans to a single agency, which is going to have to marshall the resources at the same time to deal with 20 El Pasos or far bigger, really. I mean, you take El Paso and multiply it by 10 and then by 20, and then maybe you would be somewhat at about what the FTC would be facing.

I do not think human ingenuity and the largest budget you can devise is going to be able to produce answers in, you know 8 years, 10 years, 15 years. There is no wisdom in the specific span.

Dr. MEASDAY. Just one more point that I would like to make. Although, let me say that I think that the 3 years is an awful tight schedule for this. But you talked about the Public Utilities Holding Company Act as having involved a much smaller volume of assets, which, of course, is certainly true. And, without looking at the question of whether the reorganization was much simpler, it still placed some demands on the capital market, which, itself, was much smaller at that time. In other words, we can talk about the very large volume of assets today and compare that to 17 billion in 1935. But I am thinking here, in 1950, the capital market took, I think, about $6 billion in new corporate issues. 1971 was a peak, and the market took $45 billion. And, in 1950, the average volume traded on the New York Stock Exchange was 2 million shares a day. I think, yesterday, if I am correct, it was close to 35 million. And my point in here is that the capital market, itself, has grown phenomenonly. Now, I would gather that Mr. Gary would say it still has not grown enough to take care of the trend of the future.

Mr. GARY. Yes, sir.

Dr. MEASDAY. But my point here is that—and I would like to see if you would agree with it—that the volume of assets we are dealing with here today is not that much greater than what we were dealing with in the thirties, if you put the Public Utilities Holding Company Act together with the separation of commercial and investment banking operations and separation of airline operations from manufacturing operations and so forth. In other words, a tremendous amount of divestiture was required in the thirties and forties relative to the market at that time.

Mr. BATOR. Let me start and, Ray, you add. I do not disagree. But, in terms of relative sizes, I still think the utility side was far smaller. But the crucial distinction is not so much size of assets. It is that, in the disposition—in the divestiture program required by the Utility Holding Company Act, what was being dismembered were really dead branches—many of them bust, many of them, even if not bankrupt, with enormous preferred stock arrearages—but not the operating entities. There is no question that they sat on their own bottom and continued. To use Senator Hruska's simile, you were not carving up an automobile into its parts; you were separating out an automobile in Brockton and one in New York and one in Lincoln and one here and one there. And they, I assume, could continue to finance on their own bottom.

Mr. GARY. I think that covers it, but I would also add that the point that we were trying to make is that we are facing a period of capital stringency where, in fact, only the most credit-worthy entities are going to be able to get the capital. And, as you enter into this kind of a period, investors get more and more selective. And their habit, in so doing, is illustrated by what happens in times of financial instability, like, during the crunch period of July to October of 1974, when many credit-worthy public utilities simply were not able to finance at all in accordance with their requirements. At the time, they were faced with very sharply rising fuel costs and the fact that their regulatory authorities, individually, were not reacting fast enough to permit the earnings to grow. And then Con-Edison skipped the dividend. And we entered into a period where, for lower grade credits, we simply could not sell long-term bonds at all at any price. And, at the price that would have been required, it made investors so frightened that something was wrong, they decided not to buy anyway.

Comparing this situation with the public utilities I really think is not instructive, in that those operating companies continued to go about their business. It also happened to be at a time when they were not making large expansions of their systems during the Depression and during the war. They simply were not putting large capital demands upon the market. But, in any case, they were not affected by the dismantling of the structure above them.

Dr. MEASDAY. Thank you.

Senator HRUSKA. Any further questions, Mr. Bangert?

Mr. BANGERT. No.

Senator HRUSKA. Thank you for coming, Mr. Wilson and Mr. Gary and these other two gentlemen.

If there are no further questions, you are excused.

Mr. GARY. Thank you, sir.

Senator HRUSKA. We have one final witness. His name is Paul Olson. Mr. Olson, you may proceed.

STATEMENT OF PAUL A. OLSON, ON BEHALF OF MAXWELL OIL CO., OLYMPIA, WASH.

Mr. OLSON. My name is Paul A. Olson. I appreciate this opportunity to present the views of Henry M. Maxwell, owner and operating head of Maxwell Oil Co. of Olympia, Wash., the State capital.

And if I may interpolate, Senator, with that introductory statement, I have just taken you from the prestigious legal and finance investment firms of New York, who have just testified, 3,000 miles over Nebraska to the locale of a working jobber on the shores of lower Puget Sound.

Our statement will be in contrast to the kind of testimony you have received this morning although we are all on the same side of the table on this question.

Mr. Maxwell has been in the oil business for over 40 years. He is an independent, wholesale jobber of petroleum products throughout the State. In addition, he now owns about 35 gasoline service stations in western and southern Washington, starting his business with a single retail unit. He operates several gasoline transport rigs. He has terminal storage facilities at three Puget Sound locations. Mr. Maxwell is a well-known, highly respected, seasoned, oil marketer. The Federal Government has called on him for advisory services on problems of the petroleum industry. He was a cofounder and longtime officer of the Washington Oil Marketers Association. He has long been active in the National Oil Jobbers Council. His voice is one that speaks with the authority of an oilman who has come up the hard way, who has survived and grown in the highly competitive gasoline marketing business, who has been a frequent spokesman for fellow oil jobbers on oil industry legislation. And he would be here today except for a conflicting commitment on an oil industry matter before the current session of the Washington State Legislature. Mr. Maxwell has asked me to thank you, Mr. Chairman, for permitting me to express his opinions, his strong opinions, in opposition to S. 2387 and other bills before this committee similar to the proposed Petroleum Industry Competition Act of 1975. Mr. Maxwell and I have been friends for almost all of the near quarter of a century that I have been in the oil business. Prior to my association with Maxwell Oil Co. several years ago, I had served in management and executive capacities with other independent oil companies, mainly in the Pacific Northwest, engaged in gasoline retailing, pipeline transportation, and terminal storaging of petroleum products. For 6 years I was the vice president of a western Washington independent oil refinery.

It is hoped that this foregoing indentification of Mr. Maxwell and myself will serve to strengthen the credentials in offering the following testimony. Yet, we certainly do not purport to be oil industry experts on every aspect of the horizontal and vertical divorcement aims embraced in the bills before you. Inasmuch as we are

more directly affected by vertical divestiture, we shall confine our remarks largely to this area. This is where Mr. Maxwell has had almost a lifetime of petroleum business experience. Thus, in this area, he can testify most confidently as to what dangers and hazards he would face as an independent marketer, if divestiture legislation should ever pass. As a competitive marketer, he has a finely attuned ear to the basic interests of petroleum product consumers in the retail marketplace. He wonders what will happen to the consumers interest in a never-ending concern over the price of gasoline, a necessity product, if divestiture should lessen efficiency and decrease competition among marketers. And this could happen. What if his current supplier elected to go into marketing with newly acquired financial resources and build service stations down and across the street from Maxwell retail units?

The answer: He could well find himself out of the retail and jobbing business. Where will Maxwell Oil Co. get its supply? What if a major or nonmajor supplier, with no refinery facility on Puget Sound, could no longer provide Maxwell with gasoline because of the whole system of product exchanges being disrupted and terminated? Who can demonstrably gainsay these possibilities? Gentlemen, we are frightened at the prospect.

Maxwell's 40-year history of oil jobbing and retailing has been mostly under his private brand name. He has hustled his sources of supply. Nearly all of it, significantly, from major oil companies and/or their affiliates. He has done his own financing. He has stood, in the best tradition of the free enterprise system, on his own two feet. All he asked was a fair break. He is 100 percent dealer oriented in the operation of his service stations. Some lessees have been with him for over 25 years. But Henry Maxwell bears some battle scars inflicted in this most fiercely competitive business of selling gasoline to the auto owners of America. He knows only too well that some top oil company suppliers, with competing retail operations or for some other reason, are not without sin in his record book. He also knows that some top independent marketing companies, as smaller integrated companies, competing with him down the street, employ practices which give him sleepless nights. And in the Maxwell record book of unfair tactics, some of this is printed in even larger type.

What other effects will divestiture have on Maxwell? We all know the whole process of supervising this dismemberment of the huge oil industry will take years of litigation and Federal administration. And testimony on that point has been offered here this morning. There will be another supervising agency which will likely become, as most do, another permanent member of the Federal bureaucracy. Mr. Chairman, we cringe at the thought. The Maxwell Oil Co. has more to fear today from the current Government oil bureaucracy than from any entity in the petroleum industry. We are more concerned with the oil bureaucracy than with any marketplace competition, major, independent jobber, or retail level.

Maxwell is still in business after 40 years. But he can't stand much more of hiring the lawyers, the accountants, clerks, and typists needed to fill out dozens of forms and reports for Washington, D.C.—forms on which he records every scintilla of information bearing

on what product he buys and from whom, how much, at what price, where, and to whom he sells it for and how much? He is asked to turn over to some local Federal official the name of every competitor who would be affected if Maxwell took on another customer in the area. Unbelievable, yet true.

With all of the persuasiveness of which we are capable, we ask the help of the Senators on this committee in reducing the appalling effect of useless and choking Federal controls on Maxwell Oil Co. Yes, and on 15,000 other jobbers in your States and across the Nation.

We are dealing with an alarming condition which has the faint markings of some sort of conspiracy, contrived or inadvertent, in restraint of the right of oil jobbers to function under the free enterprise system. Every other segment of the oil industry is similarly drowning in a sea of regulative edicts, the like of which there is no comparison in the history of Federal regulation, to the best of our belief and knowledge. Most oil jobbers are willing to take their chances of survival without divestiture, if they do not drown first.

Mr. Chairman, we respectfully assert that if divestiture with its massive, deep, traumatic, irreversible and dismembering repercussions on crude production, pipeline transportation, refining, and marketing sectors of the industry should ever pass the Congress and concurrently bring with it an increase, not a decrease in Federal regulation, this will be the saddest day in the history of the oil industry. There will be no further need for the Senate or for the Congress to worry longer about the health of the free enterprise system in the American petroleum industry. The patient will have suffered a strangled demise.

In the four areas of crude production, transportation, refining, and marketing, the percentage of independent competition is increasing each year. Industry and trade association figures show that true independents now produce about 14 percent of domestic crude oil. Independent pipelines, about which there has been considerable discussion this morning, account for 22 percent of the ownership. This was testified to earlier and commented on by you, Senator Hruska, to the effect nearly 100 percent of pipelines are subject to Interstate Commerce Commission regulation. Independent refineries turn out about 28 percent of the country's finished petroleum product.

In 10 years the independent marketers of the country have advanced about 10 percentage points to a position of jobbing and retailing about 30 percent of petroleum products sold. And we will continue this expansion of our percentage of industry functions, if the trend of recent years is not artificially interrupted, it should be added, by the passage of this kind of divestiture legislation.

The petroleum industry of this country has been caught up in a succession of events which began with the Middle East war. Service station lineups, allocations, unbalanced distribution of limited crude and finished product supply. About the same time came the embargo and oil price setting by the Arab and OPEC countries. With it came skyrocketing prices for the whole range of petroleum industry finished products beside fuel oil and gasoline. And there was a temporary spurt in most major oil company products. The timing turned out badly. A portion of the American public, in their understandable

frustration, has insisted, and is insisting, on finding a "scapegoat," a "whipping post," on which to vent their emotional reactions. We of the petroleum industry are still feeling the result of that pentup anger. And so does the Congress.

Many voluntary changes have taken place in the industry as a result of this experience. Most of them, other than Federal regulations, are on the plus side, from the viewpoint of Henry Maxwell, a keen observer. Many large oil companies are changing their station-dealer policy to the advantage of the operator. Others have converted consignee agents into independent jobbers with long-term supply contracts. Some companies, either voluntarily or yielding to pressures, are selling off retail stations and cutting back on new station construction.

In light of the above, Mr. Chairman, Maxwell Oil Co. makes a plea to you before you take further action on divestiture bills. We ask that your committee make a more careful study of the changed circumstances in the petroleum industry which have taken place in the last 10 years, the last 5 years. Yes, the last 3 years. The hearings conducted by the Antitrust and Monopoly Subcommittee on the oil industry during the past 10 years are virtually obsolete. We respectfully, but strongly, urge this committee in fairness to all to initiate such a new study of the petroleum industry as it exists today. To study the effect of divestiture on the energy independence project. To determine as accurately as possible the effect of divorcement on the collateral reserves of a growing list of "problem" banks. This would be banks with investments of billions in oil company joint ventures such as the Alyeska pipeline or offshore exploration and drilling both at home and abroad, on which subject you also heard testimony earlier today. Would the millions of investors in oil company stocks and bonds, totaling billions of dollars, be adversely affected? And how would that affect our economy at this state of the recession?

We respectfully state, Senator Hruska, to this subcommittee, and to the full Judiciary Committee, the U.S. Congress cannot afford to make—I repeat, the U.S. Congress cannot afford to make the slightest legislative error of judgment on an oil industry divestiture proposal which so vitally affects the entire American industrial and economic framework. We reiterate our request for a new oil industry study, with all due respect, because we believe there has been a notable absence of documented and uncontrovertible evidence dealing with the subjects and questions we have posed here today.

What, we ask, what petroleum industry witness, with the knowledge born of practical experience, has stepped up to this table and analyzed with exacting certainty the beneficial end effects which horizontal and vertical divorcement will have on the consumer? On the availability of energy unit supplies in every corner of the United States? On easier competitive survival for the independent crude producer, the pipeliner, refinery, and marketer? And let us not forget, if we may respectfully suggest it, to include in such study the matter of how increasing Federal regulation, especially in the new oil bureaucracy, may be disastrously hobbling all levels of the oil industry. And such study could include a review of all the volumes of statute books, bulging with antitrust and Federal trade regulation legislation, placed there by Congress these last 60 or 70 years.

And if these laws need updating, streamlining, or refurbishing for use, when and if needed, in order to accomplish their original purpose more speedily and effectively at the hands of Justice Department and Federal Trade Commission lawyers, then that, too, should be done.

We believe these expressed convictions of Henry Maxwell, based on his knowledge and practical experience, are thoroughly representative of majority sentiment at all levels of the petroleum industry.

We fervently request you weigh, ever so carefully, the scope and timeliness of the proposed divorcement and divestiture legislative proposals in the context of this statement. We hope Mr. Maxwell's views constitute a useful contribution to the committee's deliberations.

Thank you very much, Mr. Chairman.

Senator HRUSKA. Thank you, Mr. Olson.

Mr. Bangert, have you any questions?

Mr. BANGERT. No questions, Mr. Chairman.

Senator HRUSKA. Dr. Measday?

Dr. MEASDAY. No questions.

Senator HRUSKA. Later this week, Mr. Olson, we are going to have additional distributors, independent oil dealers, and jobbers come before our committee. I know they will welcome the reinforcement which your paper will give to the views that they will express at that time.

Mr. OLSON. Thank you for your gracious statement, Senator.

Senator HRUSKA. I thank you for being here.

We will recess until 9:30 tomorrow morning in this same room.

[Whereupon, the hearing was recessed at 12:50 a.m., to be reconvened at 9:30 a.m., on January 28.]

VERTICAL INTEGRATION IN THE PETROLEUM INDUSTRY

WEDNESDAY, JANUARY 28, 1976

U.S. SENATE,
SUBCOMMITTEE ON ANTITRUST AND MONOPOLY
OF THE COMMITTEE ON THE JUDICIARY,
Washington, D.C.

The subcommittee met at 2 p.m., in room 2228, Dirksen Senate Office Building, Hon. Roman L. Hruska presiding.

Staff present: Charles E. Bangert, general counsel; Walter S. Measday, chief economist; Patricia Y. Bario, professional staff member; William E. Kovacic, staff member; Catherine M. McCarthy, chief clerk; Peter N. Chumbris, minority chief counsel; Emory Sneeden, minority assistant counsel; Garrett Vaughn, minority economist.

Senator HRUSKA. The subcommittee will come to order. We will proceed with the hearings on the several bills dealing and pertaining to proposed divestiture of the petroleum industry in the United States.

Our first witness today is Mr. Richard J. Boushka, president of Vickers Energy Corp.

Mr. Boushka, you may proceed with your testimony.

STATEMENT OF RICHARD J. BOUSHKA, PRESIDENT OF VICKERS ENERGY CORP., ACCOMPANIED BY DUKE R. LIGON, COUNSEL

Mr. BOUSHKA. Mr. Chairman, members of the subcommittee, I am Richard J. Boushka, president of Vickers Energy Corp., headquartered in Wichita, Kans. With me is my attorney, Duke R. Ligon, a partner in the law firm of Bracewell and Patterson.

I am pleased to be here to present my position concerning the legislation in which this Subcommittee on Antitrust and Monopoly is considering to mandate divestiture by certain vertically integrated oil companies.

Vickers Energy Corp. has 7,000 barrels per day of crude oil production and 100 million cubic feet of gas per day. It owns a 60,000 barrel per day refinery in Ardmore, Okla., and markets through 950 service stations, one-half of which are company owned and operated. To give you an idea of our size, we are the 29th-ranked oil company in the United States, based on gasoline sales.

These figures are significant, but certainly minimal when compared to the vital statistics of the major oil companies.

While, at first blush, one could immediately assume that we would profit by the breaking up of the majors, it is our strong opinion that not only is the converse true, but we, as one of the intended beneficiaries, might suffer a fate worse than those who are forced to divest. Before discussing the pros and cons of divestiture or divorcement, I would like to discuss the practicality of the whole issue of vertical divestiture.

If the large majors are forced to sell pieces of their businesses, who could possibly afford to buy them? New refineries cost about $3,000 per daily barrel of capacity and used refineries about $2,000. Utilizing the lower figure for 500,000 barrels of capacity, one divested refinery would sell for $1 billion. The refinery capacity which is proposed to be divested would be considerably in excess of the 500,000 barrel illustration I have used. We, and the other independents, certainly could not step forward and pick up many of the divested assets.

Most of the other large U.S. corporations have their own capital and financial problems at the moment. Even if the majors are willing or are forced to carry the financing, that loan would destroy most purchasers' balance sheet and curtail their other corporate activities for many years. I seriously question the practicality of having the majors sell their assets, and I am afraid that no one has really given this aspect serious considerations. The only alternative would be to spin the assets they are forced to divest to their existing stockholders

Let us take a look at the refining and marketing company which has been set out in the cruel world by itself, without preparation or warning.

For many years, the majors have been accused of subsidizing their refining and marketing operations from their vast crude oil holdings and profits. I cannot verify the accuracy of that accusation, but I believe it to be true. If it is true, a new divested refining and marketing company will require two things: (1) New money poured into it to make it viable; and (2) higher prices from the consumer to offset the historical subsidy.

There is no question in my mind that, standing alone, the refining and marketing divisions of the large oil companies will have to raise prices to receive an adequate return on stockholder investment and sufficient capital to pay dividends and maintain their existing properties. If the consumer must pay higher prices to keep the various piece in existence, obviously you have defeated one of your basic divestiture goals. Rather than be distraught by the huge size and power of the major oil companies, it seems to me that the American public ought to be thankful they exist in their present form. There are some projects that independents simply cannot handle. For example, just a few months ago, when the final drilling was completed on the Federal leases, offshore Florida, the final score, unfortunately, was no oil, no gas and the companies, primarily majors, that participated in that exploration program lost a combined total of $1 billion. You did not see Vickers on that list of losers. We, too, were very impressed with the geologic possibilities that existed prior to drilling, but it was far too risky for us to expand a large portion of our net worth on one single play.

The American public would have been the eventual beneficiary, had the operation been successful, but only the majors had the financial stamina for the actual results. They wrote it off and went about their business bruised but not destroyed. We need that kind of resiliency. If split up, will they retain that ability? It seems to us an unnecessary risk to take. Although you are dealing with the subject of vertical divestiture in these hearings, the above point applies similarly to horizontal structure problems.

If you break up the major oil companies and dilute their resources and expertise, the horizontal divestiture problem might become academic. Rather than restrict the majors from entering new energy forms such as nuclear and coal, the Government should be encouraging them to expend as many dollars as possible to speed the process of moving from dependency on foreign oil to new domestic energy sources, whatever they are. A fragmented approach to the development of new forms of energy will not only cost the American consumer more in the long run, it will also disrupt one of the Nation's most potent forces for seeking alternative energy sources.

If a unified approach, utilizing the tremendous resources of the major oil companies, is not implemented, and quickly, we, as a Nation, may find ourselves phasing out of oil and gas with no readily available alternative. Especially at this time in our country's history, we cannot afford to dismantle its leading energy companies. Our business is our own, but other countries have actually encouraged mergers to insure that their industries would be in the hands of efficient, well run, internationally competitive companies. It is ironic to me that we are thinking of going totally in the opposite direction.

If you agree with my position that we need the major oil company size and power for research and development of oil, gas, coal, and nuclear energy, let me alleviate your concern that if the majors are left alone they will eventually eliminate the independents in the oil industry. There is a misconception regarding the power of the major oil companies in the marketplace. Specifically, I would like to address myself to retail gasoline marketing, where we have successfully competed with the majors for many years. When you drive through a town or city, more often than not, the major oil prices will be 2 to 5 cents per gallon higher than the independent stations. There is a good, sound, basic reason for this, with nothing sinister involved. In most cases, major oil company marketing costs are higher than the independents. I emphasize, in most cases, they are not the low-cost operators. You might even say that some aspects of their system of marketing are antiquated. Because of these higher costs, the majors have lost market position over the past 5 to 10 years. That is predictable for a high-cost operator.

It is apparent to me, and hopefully to you, that this is a situation that should be left alone. The competitive forces in the marketplace are working, and any disturbance of these natural forces might cause this trend to reverse and actually hurt the independent segment of the industry, the very thing a breakup is proposed to help. When the independent sector is hurt, the end loser is the consumer; and, even though he might not realize it, he has received a bargain for many years, due to the very competitive nature of the gasoline marketing process.

We are asking that the natural forces of the market be left alone. Divestiture will not make the majors low-cost operators overnight. In the same vein, if the large major oil companies had been broken up, say 15 years ago, as is proposed today, the phenomenon of high-volume, low-cost independent operators gaining market share would never have happened, many of the large independents today exist because of the overbuilding of refining facilities by the majors. The overall costs of operation are not too much different in a 300,000 barrel per day major refinery than a 50,000 barrel per day independent facility. The incremental production from a large, say, 300,000 barrel facility can be quite low cost. This supply of incremental or spot gasoline provided the springboard or basis for the construction of high-volume, low-cost units by many independents across the country.

Two things would have happened if the majors had been broken up.

First of all: The overcapacity might never have existed because, instead of the one 300,000 barrel per day plant in my example, there might have been eight 30,000 barrel per day plants.

Second: The surplus gasoline, if it existed at all, would not have represented the bargain it did to the independents and eventually the U.S. consumer. If the majors are broken up, we are actually encouraging the construction of smaller, less efficient refinery units. This will mean that there will be less gasoline available for the independent marketers who rely on others for economic sources of supply.

I noticed that one of the bills under consideration speaks exclusively to pipeline divestiture. Traditionally, the pipeline area has caused the most emotional conversation and always has been the first discussion topic regarding divestiture. We feel the pipeline subject has been overplayed and a simple business made mysterious. Alternatives are too easy to come by for anyone to be injured over a long period of time. I have heard some proposals which suggest that the majors divest themselves of their pipeline interests to independents or smaller companies.

The one unanswered question that I have, and I think you should have also, is: Who is going to take care of the majors' dealers and small business customers who have been supplied for years through these lines? If the new owners of the line curtail the shipment of the former owners, the proportionate injury is less for the majors than for their independent dealers and jobbers.

We feel the general pipeline situation has provided the logistics for effective competition, or companies such as ours would not have been able to grow as we have over the past 5 to 10 years. Much like the service station area, any disruption could have the opposite effect than is intended by divestiture. There may be those in the oil industry who would disagree with my testimony. I ask them to examine their corporate consciences and determine whether or not they might be guilty of trying to justify past poor management decisions by blaming the majors.

Gentlemen, in business as in politics, all important decisions involve risk. The most obvious risks in business are economic in nature, but there are others that an effective manager must consider when

charting a direction for his company. When Vickers decided to expand its refinery in Ardmore, Okla., and did not own or control the volume of crude oil necessary to supply that new capacity, we assumed the calculated risk that we would be able to obtain that raw material in future years.

If I come to Washington 3 years from now, it should not be my prerogative to scream antimajor slogans regarding power or monopoly and request relief in whatever form because I knew full well, when I expanded that new refinery, the risk and dangers involved in crude supply. Too many times, gentlemen, you, as legislators, are asked to find a solution to someone's predicament which was caused by poor management judgment and decisions. When you take action on that type of situation, you penalize those who exercise good thinking and prudent planning. Inherent in a discussion concerning the breaking up of the majors is that others in the oil industry need a subsidy to exist. We maintain that the free market in the oil industry will allow large, small, and medium-sized companies all to coexist without subsidies, which breed weakness and mediocrity. We feel that the recipient of a subsidy eventually becomes so dependent on that handout, that he becomes an inefficient operator and a high-cost supplier of products to the consumer. We have great respect for the overall posture and power of the major oil companies, while, at the same time, we feel we can effectively compete with them in their present corporate style and format.

Individually, I am extremely concerned as a private citizen, and corporately, we feel very strongly that any move to cut the majors "down to size" would be counterproductive and extremely detrimental to the best interests of the American consumer.

Gentlemen, that concludes my statement. I appreciate the opportunity to appear before this committee, and I am prepared to answer any questions there might be.

Senator HRUSKA. In your statement, Mr. Boushka, you say there is no question in your mind that, standing alone, the refining and marketing divisions of the large oil companies would have to raise prices to receive an adequate return on stockholder investments and sufficient capital to pay dividends and maintain their existing properties. That is all very good as a statement for existing companies that have their plant, and they are able to operate from that base with an acquired set of facilities, but what about anyone who wants to go into the business with the uncertainties of the supply of product flowing from divestiture to which you have already referred? How will they be able to attract capital for such a proposal in the light of the unpredictable earnings which would flow from that difficulty of getting an assured supply of product?

Mr. BOUSHKA. Senator, you mean an assured supply of products from the existing major facility?

Senator HRUSKA. From the suppliers, from the refineries, from anyplace they can get it.

Mr. BOUSHKA. It would be a very risky proposition for them, and investiture would, in my mind, only enhance the problem, would make smaller, weaker entities which would cause more consternation for somebody entering the business that wanted to buy supply from a large low-cost facility.

Senator HRUSKA. Thank you very much.

Mr. Bangert, have you any questions of the witness?

Mr. BANGERT. Yes, Mr. Chairman, with your permission.

In your statement you indicate that when you drive through a town or city, more often than not the major oil prices will be 2 to 5 cents per gallon higher than independent stations, and you say that, in most cases, major marketing costs are higher than independents; they are not low-cost operators, and you say—you might even say that some aspect of their system of marketing are antiquated. It seems to me that you're saying, in effect, that the majors, at least in many areas, are not as efficient as the independents. Is that a correct assumption?

Mr. BOUSHKA. I have anticipated this might be the most controversial portion of my testimony. Inefficient is not probably the correct word, Mr. Bangert. The system of marketing which has evolved for the majors has put them in a position here, in 1976, which means that from the refinery gate through the consumers that their costs are relatively higher than newcomers, such as ourselves, to the metropolitan area marketing concept where you have new stations, high volume which leverages your cost. The majors have a setup of jobbers and dealers, and there is very little they can do to change that mode of operation. That is intertwined with many other problems, and whether they stand as they do today or are broken up is not going to change for them. Efficiency is not the total word. The major oil companies run very few of their own stations. Independent businessmen run their stations, and they merely sell the gasoline to them.

Mr. BANGERT. Under a lease arrangement.

Mr. BOUSHKA. Under a lease arrangement where a company such as ourselves and several other independents would operate those stations ourselves, and, as such, we have been able to have lower cost operations.

Mr. BANGERT. But is it not a fact that the reason that the majors find themselves in the position that they are in now in marketing is because the independents did initiate efficiencies, if you will, in terms of gas-and-go stations, in terms of large volume operations, and that the leaders actually, in marketing area, have been the independents and not the major oil companies.

Mr. BOUSHKA. That is very accurate.

Mr. BANGERT. In your statement, you say: There is no question in my mind that, standing alone, the refining and marketing divisions of the large oil companies will have to raise prices to receive an adequate return on stockholder investment and sufficient capital to pay dividends and maintain their existing properties. On one hand, you are saying that the majors' marketing system is really an antiquated system. It seems to me that that being the case, that has to be a drain on the refinery system at this time—upon the major refinery system. Profits someplace have to make up those losses of marketing.

Mr. BOUSHKA. That is true.

Mr. BANGERT. Then why do you see refining divorcement as causing a worse situation?

Mr. BOUSHKA. I think it will end up worse, especially in your term. I see it as no solution. I bring it out to merely point out that it is not a good proponent for divestiture because I think that the

reverse will happen, but I think the biggest odds over a long period of time is going to be that it will be status quo. It is almost impossible for them, over any reasonable period of time, to completely flip-flop the marketing program they have had for 20 years because this jobber-dealer network that they have, they have serious problems coming in and building high volume units down the street, and you get involved in pricing and other situations which cause them great duress.

I previewed that statement by saying that if they have been subsidized from their crude oil operation, or if they had been subsidized even from their refinery operation, and those are set aside, it is obvious that that money has to come from somebody's pocket. It is going to have to come from the consumer or the stockholders of that separate company are going to have a real problem, and they are not going to be very happy. There is going to be pressure somewhere that is going to cause a collapse of that system. Unfortunately, too often, the guy that is going to get hurt is the little businessman and little dealer.

Mr. BANGERT. But would you agree that, at least, a reason for their antiquated, inefficient marketing system was the fact that they could shift profits all along the line, and, therefore, could tolerate that kind of an antiquated marketing system?

Mr. BOUSHKA. No; I do not think that is a primary reason. That might have been part of the picture, but the running of service stations yourself, to be able to sell at the price we are, and still maintain adequate returns, is as much of an operational situation as it is a marketing one. It is necessary to have tight controls on a widespread basis, and I think that the majors were not functionally set up to supervise that type of operation. They did what probably any prudent businessman would have done at the beginning; they set up an independent dealer network who were local businessmen to handle their product. And they stayed out of the operational end of that business, which, for a large company, is a very difficult proposition. A company our size has a much better chance of that, and companies smaller than us have an even better chance of doing it. We work every day to make sure we do not get so big that we get too far away from being able to control our businesses several hundred miles away. So I do not think that the subsidy in this particular case was the prime mover. I think it was an operational problem that they did not know how to handle. And I think any of us sitting in the same seat would have made the decision they did at the time.

Mr. BANGERT. Well, there is, at least, a school of thought that would indicate that the reasons you have the plethora of gasoline stations today is because of the vertical integration of the majors in terms of they were producing crude, they had to get rid of that crude some way. It went to their refinery, and they still had to get rid of it some way. And so that was why the tremendous plethora of stations. Do you think this is correct?

Mr. BOUSHKA. I do not know if I can really pinpoint it to the vertical issue or problem. But it also ties into the fact that they were competing with each other, and I think that many of them, looking with 20–20 hindsight, would admit this today, that they got

too tied up with market share and the concept of four stations on each big corner in a big city and, I think, national marketing. I think that theory has plagued several of them, and they wish they had never gone down that road. I think they would have been better off staying in an area where they had good controls, et cetera, rather than try to be in the 48 States in the beginning and 50 now. And it ties into a marketing philosophy or syndrome, and I think they got carried away with a theory that did not pan out for them over a period of time.

But I still come back to the belief that, "thank goodness, they built those big refineries," and, "thank goodness, they built more than they could handle," because it did generate the springboard for companies such as ourselves and many others—not many, but several others—who used that extra capacity and went on a new theory of marketing. And I think it has helped everybody.

Mr. BANGERT. I am wondering if you are really being too modest in terms of the effects and potential power that the independent marketers had. It seems to me that one of the things we have learned in our free enterprise system is that, if there is a need to be filled, the free enterprise system will fill it. I am not so sure that I would agree that those refineries would not have been built, had it not been for the vertically integrated nature of the majors. And I wonder what your comment is on that.

Mr. BOUSHKA. I have been through 1½ or 2 years of trying to build a new 300,000-barrel facility. And it might be best for our relationship with our stockholders to drybrush it and to say I had a lot of environmental problems, or a lot of OSHA problems, or whatever, or the regulations in Washington were so confusing we did not know the future, but the truth is that, assuming a crude supply, which we felt we had, assuming the availability of money, which, a combination of domestic and foreign, we probably could have obtained, we would have destroyed our balance sheet with the debt so badly that we would have had to close shop to everything else for 10 years. And I am speaking of bond ratings and the other things that classify a company.

As an independent wanting to build a large facility, there were many things involved the balance sheet problem that I did not think about when I first started approaching the project. You finally come to the conclusion that you have got to walk before you can run, and you do not jump from 60,000- up to a 300,000-barrel unit. Over a period of time, you might get there, but you have to do it in steps to be able to financially digest it. And we were confident of selling the product, and we had enough feel of the crude market, we felt, that, without embargoes, et cetera, we could probably handle our own in obtaining the crude at an economical price. But the balance sheet problems just did not allow us to proceed.

Mr. BANGERT. Who do you obtain your crude from for your refinery?

Mr. BOUSHKA. We have a gathering system near the refinery, which is made up of several individuals that own the leases. We will probably obtain at least 50 to 60 percent from foreign crude. You know, at the moment, that is probably our posture.

Mr. BANGERT. From who?

Mr. BOUSHKA. Well, probably from three or four people, eventually countries, the Middle Eastern countries, basically.

Mr. BANGERT. Not directly from the country, I assume?

Mr. BOUSHKA. Some will be directly from the country and some through major oil companies with what is left from their situations in the Middle East.

Mr. BANGERT. Whatever they have left over that they can give?

Mr. BOUSHKA. No; I did not mean it that way. Whatever they have been able to retain from their negotiations with the foreign countries.

Mr. BANGERT. As you may know, recently, I believe it was in December of last year, the Independent Refinery Association testified. And, although they did not agree with divestiture, they did indicate that they did not think that there was a free crude market for the independent refinery. And they asked that there be a commodity market created so that the independent refinery could buy crude on what they felt would be a competitive basis.

Do you have any comments on that idea?

Mr. BOUSHKA. It is a tough problem, but I feel like it is one you have to solve. Maybe I oversimplified the issue, but, when you build a refinery without crude supply, without owning your own crude, you have made that draw at the time. And you cannot go down through the years and have problems and struggle and expect to go to anybody. You took that risk when you got yourself in that position. We have not had anything different from anybody else. We have had very minimal crude supplies for our refining capacity, but we have always been able to run 90 percent capacity, which is just about normal, with shutdowns and turnarounds and all. And it is a matter of a little bit here and a little bit there and a lot of work and good people.

When the country is in a position such as we are in today, with everybody short, all of us have to, then, broaden our scope. And it was a big jump for a refiner in Kansas to start dealing in Libya or Saudi Arabia. But you just have to hitch up your belt and get on an airplane and find out what that game is all about. And I think that initiative usually solves most problems.

Mr. BANGERT. Well, the president of Mobil was in testifying the other day, and he testified to the effect that one of the efficiencies that he saw in terms of vertical integration was the security of supply for his refinery from the vertical integration backward into production. I assume you do not have that same kind of efficiency, if you will call it efficiency, that he has?

Mr. BOUSHKA. The majors have operated on a balanced theory. They try to equalize marketing crude and refinery capacity. We have never gone down that road. We sell at least twice what we can manufacture, and have historically. We feel that has great advantages, because, if product is tight, you make a lot of money, if it is loose, you can buy cheap. We have not worried about the balancing problem. So that I do not know whether someone with crude today, with the regulations as they are, is any better situated than anybody else. So it certainly is comforting to a large-size marketer with a large marketing area to have a controlled crude supply. That has to have

some truth to it as far as sleeping better at night, for sure. It is one thing to scramble for 50,000 barrels a day of crude oil, versus 500 or, you know, 750,000 barrels a day.

Mr. BANGERT. But when you say that an independent refiner that builds a refinery without having assured supply of crude has to just take that risk, he is taking a greater risk than an integrated major would take, who does have a pretty assured supply of crude from his own operation, is that right?

Mr. BOUSHKA. I think they are gradually approaching our position. I do not think that all of them have 100 percent backup of the refining capacity anymore, and that with any expanding they do, they certainly have to take on some of the same risks that the independent refiner has for years. And they are going to have to find that crude from outside sources today. Not too many of them, I do not believe, have 100 percent. They are dropping pretty fast. It might be because they have been in the game longer, they are going to have sources internationally, but we all know that that can change pretty quickly.

Mr. BANGERT. Well, as far as domestic sources, they may not have those.

Mr. BOUSHKA. A lot of the foreign countries, for whatever reasons they have—a lot of it might be more conversation than fact—actually prefer independent refineries as far as customers.

Mr. BANGERT. Thank you very much, Mr. Boushka.

Senator HRUSKA. Thank you, Mr. Counsel. Thank you, Mr. Boushka, for coming, and you, Mr Ligon, for being here with your client.

Mr. LIGON. Thank you.

[Recess.]

Senator HRUSKA. The subcommittee will resume its session.

The next witness is Mr. Bill Brier, director of the energy resources of the National Council of Farmer Cooperatives.

You may proceed, Mr. Brier.

STATEMENT OF BILL BRIER, DIRECTOR OF ENERGY RESOURCES, NATIONAL COUNCIL OF FARMER COOPERATIVES

Mr. BRIER. Thank you, Mr. Chairman.

My name is Bill Brier and I am director of energy resources of the National Council of Farmer Cooperatives. The National Council is a nationwide association of 112 regional farm supply and marketing cooperatives serving the needs of 1.5 million farmer members. Council members also include State councils of farmer cooperatives and farm credit banks.

Among major farm supplies sold to farmers and ranchers by farmer cooperatives are petroleum products. To distribute petroleum products, cooperatives operate pipelines, tank cars and trucks to transport fuel to 2,700 local cooperatives and directly to farmer and rancher members. To supplement the distribution system, cooperatives also own and operate bulk plants and service stations.

To serve their petroleum markets, nine regional farmer cooperatives own and operate eight refineries which supply about 280,000 barrels per day to the system. To supply their refineries, cooperatives operate an exploration and production program providing 30,000 to

40,000 barrels per day of crude oil. An additional 60,000 barrels per day of petroleum products are purchased on the street for distribution through local farm supply cooperatives.

Examination of S. 2387 and similar divestiture legislation indicates at this time cooperative petroleum operations would not be directly affected. However, since cooperatives are forced to purchase 85 percent of their crude oil and 30 percent of their finished products from other oil companies, many of which are directly affected by S. 2387, the effect on cooperatives' traditional sources of supply could be devastating and cause serious ramifications for farmer-rancher patrons of cooperatives.

As America's largest industry, agriculture pumps out over $200 billion per year in food and fiber. Of this production, 19 percent ends up in the export market, almost offsetting in dollar volume our petroleum imports. To provide this food and fiber, American agriculture is the most energy-intensive agriculture in the world and accounts for almost 15 percent of total U.S. energy consumption.

Since onfarm fuel sales are about 3 percent of the total domestic petroleum market, no single market has more than three or four major suppliers. Farmer cooperatives and the seven largest oil companies each supply about one-third of all onfarm fuel sold in this Nation. Thus, legislation such as S. 2387, which would hamper major oil companies' supply lines, might make it difficult for large segments of rural America to find adequate fuel for agriculture's needs.

When S. 2387 was introduced, the cosponsors said in part:

> There is irrefutable evidence that the sharp rise in oil prices was the single greatest cause of the soaring inflation and deep recession we have experienced in the past 2 years.

However, this belief does not in itself provide a justification for singling out vertically integrated major oil companies for the special treatment proposed in S. 2387. In fact, it would appear that during the last 2 or 3 years, the vertical integration of the major oil companies actually served to insulate the American consumer against even higher petroleum prices resulting from arbitrary crude oil price increases.

Between September 1973 and now, the Organization of Petroleum Exporting Countries, unilaterally raised crude oil prices by 400 percent. During the same period, the retail price of gasoline increased by 50 to 55 percent. While numerous explanations can be offered, the best appears to be the simple fact that competition within the industry prevented full passthrough to the consumer of crude oil cost increases. It is important to note, however, that competition in itself, if vertical integration were precluded, would probably not prevent a full passthrough of such cost increases because adoption of S. 2387 would prevent pricing flexibility by forcing each divested division to operate not only in theory but in practice as a profit center. By the same token the consumer would suffer by paying higher prices.

Farmer cooperatives believe that vertical integration in their petroleum operations is the best way to provide an assured source of supply at the lowest possible cost. Since a cooperative's farmer-rancher patrons are in most cases the cooperative's owners, the concept has obviously been examined from the standpoint of the best interests of the end user. Cooperatives are currently moving to verti-

cally integrate their petroleum operations as much as their financial resources will allow. They are making sizeable additional investments in the most capital-intensive aspects of the industry, production, refining, and transportation.

Another important measure of competition within the petroleum industry is to note that petroleum product prices are often below the legal ceilings established by the Federal Energy Administration. One regional cooperative operating in the upper Midwest reports that as a reseller it could have increased its 1975 pretax profit on petroleum product sales by 50 percent if competition had permitted the cooperative to charge the lawful margin allowed by FEA regulation. The same cooperative reports that competition is limiting current margin levels to about 40 percent of the FEA maximum.

Another example of competition within the petroleum industry is a growth comparison between major oil companies and their smaller, less vertically integrated competitors. While somewhat dated, the Department of Agriculture completed in 1971 such a study comparing four regional farmer cooperatives having the largest petroleum sales with the four largest oil companies. These cooperatives, in 1970, had petroleum sales of $558 million, in relation to $33.3 billion of total sales for the oil company. At the same time, these oil companies ranked 2, 7, 8, and 9 in sales volume among the Nation's 500 largest corporations.

The Department of Agriculture study compared various trends in the operations of the two businesses between 1960 and 1970 and found that: (1) Petroleum sales of the four largest cooperatives increased by 140 percent, while sales by the four largest oil companies increased by 120 percent; (2) net margins of the four cooperatives increased by 117 percent compared to 100 percent for the four largest oil companies; and, (3) net worth of the four largest cooperatives increased by 126 percent compared to 78 percent for the four largest oil companies.

Thus, it should be apparent that vertical integration by major oil competition within the industry and may compel consumers to pay smaller, less vertically integrated oil companies. Unfortunately, it is a natural process in problem solving to point the finger at the most obvious, or most popular target; in this case, the major oil companies. However, the national council believes that vertical integration of the major oil companies provides a protective cushion in today's volatile market in which the world crude oil price is controlled by an oil cartel.

After reviewing the popular allegations against the major oil companies and in light of the foregoing comments, the national council cannot support S. 2387. This legislation will not generate additional competition within the industry and may compel consumers to pay higher prices for petroleum products.

Thank you Mr. Chairman, for this opportunity to appear and I would be happy to try to answer any questions at this time.

Senator Hruska. Well, thank you very much.

Mr. Bangert, have you any questions?

Mr. Bangert. With your permission, Dr. Measday has just one clarifying question, Senator.

Senator Hruska. All right.

Dr. MEASDAY. Mr. Brier, you make the point that the integrated oil companies have, in fact, helped to hold prices down because OP EC prices went up by 400 percent, whereas retail gasoline prices only went up by 50 percent. Now, import crude is about one-third of our refinery runs and, on your figures, I think that is an increase of about 290 percent. And the other two-thirds domestic crude on the BLS indexes went up from September 1973, to December 1975, about 97 percent. That is an average increase in refinery crude input costs of about 162 percent; not the much larger increase in crude prices.

At the same time your retail gasoline figure includes Federal and State taxes, which have not gone up at all. If you take, instead, the wholesale prices of petroleum products, on BLS indexes from September 1973 to 1975, you have got gasoline up 111 percent, light distillates up 170 percent, and middle distillates up 167 percent, and residual fuel, which is largely imported, up to 150 percent. Would not these figures indicate that, in fact, across the whole range of petroleum products that higher crude costs have been passed on?

Mr. BRIER. Not in my judgment. I have maintained, regardless of whether it is foreign oil or domestic oil, OPEC, as a practical matter, sets the world price of oil today. And the domestic price, I think as we have seen everytime OPEC has increased, has also increased at the same level.

I think consequently, any increases that occur by OPEC will be reflected in the domestic price unless, of course, the price controls that Congress has put on the domestic crude oil production are continued. As far as the wholesale price is concerned, I would not argue with that. But the important thing, as far as our people are concerned, is that, with the exception of onfarm fuel use, they do not pay the wholesale price, they pay the full price. And they are not interested in how much of it is tax and how much of it is, as a practical matter, passthrough of oil price increases. They are forced to pay the full load, including taxes.

So, I am speaking primarily from the standpoint of viewing it from the standpoint of our users as much as anything.

Dr. MEASDAY. Solely the retail gasoline price at the pump, including tax, have you had any reaction from any of your people on propane prices?

Mr. BRIER. Yes. The ones from oil, certainly. As you know, the propane market has been a totally confused market in the last several years, primarily because of this two-tier propane price system that developed as a result of the fact that you had low-cost propane from natural gas at one level, and then you had propane from petroleum, or from crude oil, at a much higher level. And so, much of our complaints there have been the fact that they do not understand why these prices are not equalized. And if you are frozen into a supplier who got the propane from natural gas during the base period, you are much better off than if you are with a supplier that got it from crude oil. So, our major complaints there are due to the pricing differentials within the market, as much as anything.

Dr. MEASDAY. How much has the propane from refineries gone up?

Mr. BRIER. I'm sorry. I just cannot give you the figure at all. I would be glad to try to supply something for the record, if you wish, but I really do not have a good handle on that. Obviously,

they have gone up rather dramatically and this is part of the problem I am trying to explain. You have controls on natural gas and you do not have it on crude oil; and why were the FEA regulations written the way they are? There was this differential.

Dr. MEASDAY. Thanks a lot, Mr. Brier. I do not qualify as an expert.

Senator HRUSKA. It is worthwhile, it is notable, I think, that you speak, you say you speak, and we know that, in fact, you speak in a tone and against a background of genuine consumer orientation.

We have consumer groups here and there of more or less recent origin. But I know of no consumer group that has a longer history or tradition with that orientation than the Farm Co-op, such as those which compose your association. To that extent, I would think this statement and the facts to which you call attention are very worthy of consideration.

We thank you for coming.

Mr. BRIER. Thank you, Mr. Chairman.

Senator HRUSKA. Our next witness is Mr. Otis Ellis. Mr. Ellis, you have furnished the committee with a statement which is of some considerable length. Are you prepared to testify by reading the entire statement, or can you give us the highlights of the statement? What would you prefer to do?

Mr. ELLIS. Mr. Chairman, I would prefer to read the statement.

Senator HRUSKA. Very well.

Mr. ELLIS. I get a little emotional on this subject and if I just tried to handle it orally, I am afraid I might take more time than I would in reading the statement.

Senator HRUSKA. Perhaps so; you may proceed.

Mr. ELLIS. I will try to reasonably digest it. I apologize for its length.

STATEMENT OF OTIS H. ELLIS, ESQ., PRIVATE CITIZEN, CONSUMER, AND FARMER, ARLINGTON, VA.

Mr. ELLIS. My name is Otis H. Ellis. I am attorney and petroleum marketing consultant by profession, and reside at 1001 Wilson Boulevard, Arlington, Va. My present status is that of semiretirement, professionally, since current retainers only require 4 weeks per year of my time, all of which is involved in foreign petroleum marketing operations and have nothing to do with petroleum affairs in the United States.

My appearance today is not on behalf of independent marketers, as was the case for more than 25 years, nor for any oil man, oil company, trade association, or anyone directly or indirectly connected with the petroleum industry. To the contrary, I find myself making my first appearance before a congressional committee in my own individual capacity as an average consumer of petroleum products, a cattle farmer with a somewhat different concern about future supplies and prices of these products, and of possibly more importance, my capacity as a citizen gravely concerned about future energy supplies, particularly petroleum, that will be needed to fuel an economy that rests and prospers only with adequate supplies of energy.

This, my "virgin" appearance as a consumer and citizen, has not been provoked by actions and/or inactions of the domestic industry,

but rather by the actions and inactions of the Congress and the executive branch of my government whose policies and positions, thus far, in providing any semblance of long-range energy policies for my Nation have not been too enlightened. That, of course, interpolating, is a matter of judgment. In my judgment such actions and inactions have been borne more of political expediency rather than a knowledgeable willingness to come to grips with the fact that we are long overdue in beginning a realistic long-range policy directed toward the objective of achieving energy independence in the future, or at least minimizing that dependence so that our general economy and way of life may continue its upward growth.

More than 4 years ago this Congress belatedly recognized that we were in dire need of long-range energy policies. A prominent Senate committee with considerable vocalization by its chairman began hearings and investigations which were purportedly designed to establish such as a policy. The beginnings of hearings by that committee were vigorous and produced the initial appearance of a nonpartisan statesmanlike effort to pick the best brains in the country and thus come forth with a workable long-range solution to the energy needs of our country. We subsequently were faced with an embargo in the Middle East which caused disruption in our offshore sources of supply.

Although this latter situation is over, the long-range efforts appear to have gone static. Some temporary measures have been taken by the Congress and the executive branch but we still have no long-range policy, and the only thing thus far is a recently enacted so-called energy bill which does but little more than prolong imposing some mind-boggling regulations on the domestic industry, and of worse consequence, imposes some price limitations which will gravely deter the search for new supplies of oil and gas.

In brief, after more than 4 years of work on the most important matter facing this Nation—long-range energy supplies—the elephant has given birth to a mouse. I suppose what really shook me and stimulated my appearance here was seeing in the press that the U.S. Senate, by the close vote of 53 to 45, narrowly defeated a proposed amendment which would have, in substance, fragmented an industry with the proven ability to help make us energy independent, at least as far as petroleum supplies are concerned. I am here to vigorously oppose S. 2387 or any other legislation proposing the same principle of requiring the vertical divestiture of the so-called major oil companies. Since I am not a professional consumerist and because of the fact that many consumer witnesses often present a one-sided or unenlightened viewpoint, I deem it necessary to recite my credentials to show that my knowledge about the petroleum industry is above that of the average consumer citizen.

In 1948 and 1949 I was staff director of the House Small Business Committee and during that period of time I acted as general counsel to a subcommittee which held the most exhaustive hearings on the subject of the effect of oil imports on independent domestic producers ever held by the U.S. Congress on the subject.

Subsequently, as a private attorney, I represented the National Oil Jobbers Council, a federation of independent oil jobbers. In the latter capacity I found that being a lawyer was not enough and I

had to learn the complexities, not only of oil marketing but also had to learn at least the elementary facts pertaining to supply source all the way back to the wellhead, as well as some of the elementary economics intervening between the time that crude oil was produced and my clients received the finished product for sale and distribution. For 10 years thereafter I represented hundreds of independent jobbers, service station dealers, and additionally, held minor or major interest in 13 working oil jobberships, of which were subsequently sold and none of which are now in operation by me.

For a period of 10 years, 1950 to 1960, I was a consultant—not a lobbyist—to the Ministry of Mines and Hydrocarbons of the Government of Venezuela. In that position I was able to gain firsthand knowledge of the attitudes of a country whose oil and gas resources were being produced by both American companies, as well as companies of other nationalities. It was toward the termination of this representation and at the time of the change of government in Venezuela in 1960 that I saw the beginning of the embryo which later resulted in OPEC, and at that time predicted that nationalization of oil and gas resources in most of the producing countries except the United States was not a question of whether, but rather of when it would be accomplished. It was also during that period that I had a box seat view of the commonsense and businesslike methods pursued by American international oil companies in their dealings with a foreign government. For approximately 18 years I have been and still am a petroleum marketing consultant to a foreign oil company, with my duties limited to the study of markets outside the United States.

In that capacity I have had an opportunity to dig far beneath the surface and observe petroleum marketing activities in England, substantially all of Europe, Australia, Lebanon, Ethiopia, Senegal, Ivory Coast, Cameroon, Nigeria, Uganda, Zambia, Kenya, and South Africa.

In the current atmosphere of antagonism toward and criticism of the so-called major oil companies, it is also possibly necessary for improvement of my credentials to state that I have never been employed by any so-called major oil company, as defined in this bill, or by any other definition. Further, since castigating the major oil companies appears to be a rather popular political theme song, I also hasten to add that I am not a candidate for any office, and more specifically, am not a candidate for the Presidency of the United States and would not run even if drafted. I repeat again, I am a concerned consumer citizen.

It is indeed unfortunate that a proposal such as that now before the committee which so directly would affect any energy policy comes before the Congress and people of the Nation at a time when Mr. John Q. Public, as well as many Members of Congress, appear to equate anything to do with energy with whether or not it will increase or decrease the price of gasoline 2 cents per gallon tomorrow. This is in contrast with what we should be thinking and that is, whether or not we will have a supply of this product and other necessary petroleum products 10 years from today, or even as little as 5 years from today. It is my belief that in the consideration of the effects of this proposed legislation the controlling factor in the

final determination should be what is best for the long-range energy policy of our nation. And it is with this in mind that I proceed to look at the specifics of this bill.

When I first read the bill, I made the mistake of starting on page 2 with "Definitions" and then proceeding to page 6 through what the bill proposed to do. In brief, among other things, it proposes to say to approximately 19 major petroleum refiners that within 3 years they must elect whether they will engage in production, transportation, refining, or marketing, but they cannot engage in any two or more of these activities. Of course, there is another election not mentioned in the bill and that is the tragic one that they may wish to sell their petroleum assets and get out of the business entirely. To any person with my background in the industry and particularly my almost radical fervence for the protection of independents in all phases of the industry the implications were appalling. It was immediately obvious that the end results, if such legislation became law, would leave the vast majority of independent marketers, both jobbers and service station dealers, at some point between tragedy and disaster. It was inconceivable to me that anyone, even a radical, who knew the workings of the domestic petroleum industry could have had a hand in this draftsmanship. I began to wonder if there was some compelling reason that I was unaware of which might necessitate such drastic action at a time when we needed the most vigorous petroleum industry we can conceive of to make its contribution to future energy needs.

I then turned back in the bill to section 2 entitled "Findings" and read through the so-called policy statement on page 2. The language under findings ranges all the way from that which might be contained in a mother's prayer to that which might be used in describing an economist's nightmare. As best I can decipher, it, in substance, intends to say that a monopoly or oligolopy, whatever that means, exists in the petroleum industry and as a result, there is inadequate or total lack of effective competition, and further, that existing antitrust laws have been inadequate to maintain and restore effective competition in the petroleum industry. Quite obviously if such findings were true, then this would be a compelling reason for some form of drastic remedy. I cannot, however, on the basis of my more than 25 years experience with the petroleum industry, agree that these findings are correct. In fact, my experience has been exactly the opposite. I think it is undisputed that if the 19 refiners who would be required to divest certain assets under the terms of the bill could, if unfettered either by self restraint or legal restraint, run everyone else out of the petroleum industry in a relatively short period of time. As a matter of fact, it is possible that an even lesser number than 19 could do this if there were no such restraints. Fortunately, however, since the breakup of the Rockefeller combine in 1911, no company or combination of companies has thus far seen fit to even make an attempt to monopolize the industry. The facts to support this are not theoretical garbage but are the actual facts supported by the record.

I will leave to others the more sophisticated legal and economic arguments which refute these findings and will only attempt to concern my remarks with the facts that are apparent to me and are

significant to me as a consumer and a concerned citizen. As stated at the outset, I have been an independent marketer and have represented independent jobbers for a considerable number of years. I am, therefore, a little better attuned to notice gasoline prices in the marketplace than the average motorist. In the past several months I have covered a considerable portion of the United States and most recently drove by car from Washington D.C., to Fort Lauderdale, Fla. Gasoline price wars are raging now that adequate supplies of gasoline are again available.

Self-service marketing at the retail level is growing by leaps and bounds and the share of the domestic market by the unbranded or private brand marketers is growing daily. This was a condition which preceded the embargo shortage period and is now continuing. I and other consumers like me are reaping the benefits of these highly competitive conditions. One might argue that this competitiveness has been created by independent marketers but before any final conclusions could be drawn from this, one must first ask where do they get the product at prices that will enable them to be this competitive? Obviously a substantial part of that product originates in the refineries of the 19 so-called major oil companies who constitute what is supposed to be a monopoly. An effective monopoly could very quickly stop these price wars by the very simple expedient of curtailing supplies.

But fortunately, this group, although having the theoretical and actual power, has not done so because they too are actively competing with each other for the business of these marketers. It might be further added that all of these prices that I have seen are far below prices permitted under existing regulations so the restraint is not coming from that latter source but rather from the competitiveness of the industry. This behavior in the marketplace is not something new, but has been going on for more than 50 years with independent refiners and independent marketers getting an ever-increasing share of refinery throughput and the final market at the consumer level.

On last Thursday afternoon, I stood before the Kentucky Petroleum Marketers Association, an organization of independent jobbers, and spoke to them on their 50th anniversary as an organization. I looked out on an audience which, in a few cases, represented three generations of independent oil jobbers. All of them reasonably affluent but, I might add, scared to death that this proposed legislation would ever become law. They are frightened because most of them are now assured consistent supply, to the extent it is available to their respective suppliers and most of their suppliers are among the 19 refiners to be dismembered.

On November 22, 1975, I stood before a similar group of 600 jobbers in St. Louis, each of them a living, breathing, walking, talking, reasonably affluent refutation of the claim that competition does not exist in this industry and that because of the monopolistic power of 19 refiners it must be dismembered. The membership at that meeting was equally concerned over the potential of the passage of this bill. Those men know or have reason to believe that if divestiture is imposed on any of their suppliers, many of such suppliers, will elect to become crude oil and gas producers and abdicate the other areas, leaving the jobber at the mercy of whoever acquires the refinery facilities of the abdicating refiners.

Most of these people are relatively small when it comes to the volume of their annual sales and they have been in the business long enough to know that what will happen in the market place will be that large chains of marketers will be established and that these chains with their vast purchasing power will have first call on the refinery production of the Nation, and the smaller jobber, unless he is big enough to compete with the large chains, will be gradually forced out of business. They also have reason to believe that some of these 19 companies who have a relatively small amount of their own crude oil production as related to their refinery throughput, may elect to become either refiners only or large marketers pouring all of their assets into one or the other.

In brief, while I do not purport to speak for the independent jobbers of the Nation, all of those with whom I have talked, when told what this bill will do, immediately know one of the products of divestiture would not be to multiply the number of independent marketers or refiners but to the contrary would decrease them.

What would happen if Exxon, Gulf, Texaco, and Standard of Indiana—just to name four—elected to be crude oil producers and placed on the market all of their refining and marketing assets, the latter consisting of tens of thousands of service stations which they either own or control by lease and in turn lease to independent service station dealers. Can these independent dealers purchase these outlets? The answer to any knowledgeable marketer is that very few of them could even purchase the single outlet in which they now do business. Only an organization with vast amounts of capital could acquire these facilities which means that you have less independents competing for the consumer's business and end up with a few large chains controlling the retail market. Is this result facilitating the creation and maintenance of competition of the petroleum industry as the "policy" of this bill so piously asserts?

As a farmer-consumer I purchase No. 2 heating oil for the farmhome, kerosene to heat the dwellings of those who work on the farm, and diesel fuel and gasoline to power the machines and vehicles used in operating the farm. Additionally, I must buy significant quantities of lubricating oil and grease. Currently eight independent jobbers—and no major companies directly—compete for this business. I get the benefit of this competition. All eight of these jobbers are supplied by companies that are on the list of 19 to be dismembered. All of these are relatively small jobbers—the largest possibly not selling over 1 million gallons per year in our county. If this industry is dismembered, I do not know what will happen to these competitors. No longer will they have assured supplies. No longer will they have credit terms that enable them to carry farmers between the time of cashing in their money crops and livestock. They will be forced to scramble for what product is left available after the big marketers have gotten the cream of what is available. It is obvious that I as a farmer will be deprived of not only the assurances of supply that I now have but also the availability of competitive forces that help give me the benefits pricewise of that competition.

As a farmer, this will not worry me too much longer because I am now in the process of getting out of this business. As a consumer of farm products I am concerned. My Government has made the tape

too red and the recordkeeping too onerous for me to continue. When my Government imposes an embargo on grain sales which results in a reduction of approximately 75 cents to $1 per bushel for my corn crop this year, then it is time for me to quit. This would be understandable if that crop were needed to first feed the people of this Nation, but such was not the case. My Government stood by and watched one of the biggest monopolies in this country—I refer to the union whose people refused to load the ships—tell the Government what to do.

What a contradiction—a government that will permit monopolistic labor unions to do as they please and yet that same Government turns around and considers dismembering the petroleum industry which has made it possible for this Nation to float to victory on a sea of oil in two world wars.

I can assure you that most of the average farmers and livestock raisers of the Nation have greater fear of the oppressive conduct of their own Government than they do of big agribusiness or big oil. I have assisted in the handling of hundreds of negotiations between jobbers and their major company suppliers who were giving assistance in financing the growth of their respective jobber's operations. This financial assistance was usually given at a time when those independents could not have borrowed from a conventional bank or the Small Business Administration without the financial backing of their respective suppliers most of whom can be found among the 19 refiners subject to dismemberment. Is this monopolistic conduct?

I have reviewed the statistics annually reported by Platt's Oilgram, a respected and recognized authority on industry statistics, as such relates to the average consumer price of gasoline, exclusive of tax, paid in 55 cities for the past 40 years. These figures reflect the higher prices for this product in the past 3 years, but do not reflect, as part of the average, the extremely low prices during the depression years between 1930 and 1935.

The average price paid by the American motorist for a gallon of gasoline over a period of 40 years in these 55 cities, which are representatives of other areas, is a fraction less than 22 cents per gallon, exclusive of State and Federal taxes. This has meant that those of us who have lived that long and driven an automobile that long, could purchase for this insignificant amount of money enough energy to push 2 tons of automobile, plus a family, 15 miles into the country on a Sunday afternoon for a picnic, or to provide a round trip to work for a workman who had no other means of conveyance. This 22 cents per gallon average price includes whatever profit the service station dealer made, what the jobber made, what the refiner made, what the transporter made, and what the crude producer made, as well as the actual cost of the product itself.

It should be obvious to any observer that if this industry had operated as even a fifth-class monopoly under inadequate antitrust laws, as the findings in this bill would have you believe, they could easily have gotten 40 cents per gallon average and a first-class monopoly could probably have extracted an average of $1 per gallon. The very fact that the consumer received this much energy at such a low price —average 22 cents per gallon—proves that there is competition in the industry and no effective monopoly has control over it.

When we take a look at the production segment of the industry we see thousands of independent producers and would-be producers. In refining we see 130 or more refineries of all sizes and we should take particular note of the fact that approximately 50 of them have come into existence in the last 25 years or at least have grown. When we look at marketing, we see approximately 15,000 oil jobbers, several thousand more independents exclusively engaged in distributing home heating oil and approximately 150,000 independent service station operators. Many of the latter are doing business in an establishment they could not own but which is leased to them under terms they can tolerate and still earn a reasonable livelihood. All over the place we see growth and advancement of the independents.

We see the results of hard-driving competition not only among and between independent marketers but between refiners, both large and small. The composite of the petroleum industry has made it possible for me, the consumer-citizen and others like me, to have the direct and indirect benefits of energy provided by petroleum at very cheap prices. With the exception of the embargo period and price increases thereafter or the intervention of wartime restrictions the supplies have been so adequate and the price so cheap that the public is amazed to find prices at higher levels—all of which was not instigated by any petroleum monopoly, but rather by the drastic price increases of crude oil by Middle East producers and other members of the OPEC nation group.

There is another item of concern to me as a citizen when we speak of dismembering the major oil companies. Just who or what are the major oil companies? There are some within and without the Congress who would have us conjure up a vision that a major oil company is owned and exclusively functions for a group of officers and directors who gather in a mahogany paneled room in some distant city, sitting around a long mahogany table with their computerized brains thinking up new ways to gouge the American public as their thin lips volley back and forth the best means of doing it, all the while the greedy spittle drips off their respective chins. When the truth of the business is that such a board of directors and group of officers do not exist in any of the major oil companies and I doubt if all of them combined in any one company owns as much as 1 percent of the total stock of that company.

When we talk about dismembering the assets of Exxon, Mobil, et cetera, what we are really talking about is dismembering the assets of a widow in Fort Lauderdale whose husband was fortunate to bequeath her 200 shares of stock from which she receives a dividend that supplements her social security money in providing her with support. We are talking about dismembering the assets of pension funds to which hundreds of thousands of hard hats and other employees are looking to for their senior years. We are talking about dismembering the assets of trust funds held for widows and orphans. We are talking about dismembering the assets of hundreds of thousands of small investors who have stock in mutual funds that in turn hold stock in one or more of the 19 major oil companies. We are talking about dismembering the assets of

banks, both large and small, who have a part of their assets so invested. When we talk about dismembering the assets of the major oil companies, the Congress is putting the investing public, large, middle-size, and small, on notice that no longer can an investor with any degree of confidence put his money in any large successfully proven enterprise without fear that his own Government may dismember his investment on the basis of findings that are inaccurate and disproved by actual facts.

Dismemberment of a proven industry which by its very nature requires bigness with vast amounts of capital is, in my judgment, utter folly. For this Congress to say that laws have been inadequate to control the monopolistic power of the petroleum industry is not only erroneous but at the same time is an indictment of the Congress for failing to provide adequate laws if such do not exist. We have adequate laws. If these major companies did get out of line, those laws have been used on several occasions—sometimes maybe even when they were not justified. What laws did they use to require Phillips Petroleum to divest itself of the properties it purchased from Tidewater Oil Co. on the west coast? What laws did it use to impose severe restrictions on Standard Oil of California when it acquired the marketing properties of Standard Oil of Kentucky? More currently, what law is the Federal Trade Commission using to force Standard Oil of Indiana to agree to provide certain quantities of product and/or crude oil, if and when it purchases the assets of Pasco? If the laws are inadequate, what will be the basis that the Federal Trade Commission will use to impose a form of divestiture on the seven largest oil companies as it now proposes to do?

The fact of the matter is the charge of lack of competition in the petroleum industry and the misuse of monopolistic power unfettered by adequate laws simply are not true. I am compelled to the conclusion that the proponents of any form of divestiture legislation, as applied to the petroleum industry, are simply taking a shortcut to achieve other ends. By this shortcut I mean, they are not providing this industry with the assumption of innocence before proven guilty and are merely making the charges, and without affording the industry due process of law, are seeking to act as both prosecutor and jurors in the final sentencing.

I could sit in this witness chair and recite for days instances refuting the lack of competition in the petroleum industry. I can likewise relate conditions and acts which were in direct contradiction of the way an effective monopoly would function but it would serve no purpose to go further.

As far as petroleum plays a role in the energy that supports our economy, we who are direct consumers and we who directly benefit through the overall health of the economy should be concerned about one thing and that is, the adequate, consistent supply of petroleum products made available in the marketplace under competitive conditions. This is my concern both as a consumer and a citizen who draws his livelihood from the general economy. At a time when my Government should be encouraging the petroleum industry to be out investing its capital and drilling its head off to find new and

more abundant supplies which cannot be taken from us by foreign nationals, what is my Government doing?

To begin with they took away the depletion allowance, the very existence of which for many years was one of the greatest inducing factors for providing the whole world with adequate supplies of crude oil and natural gas. They are further restricting the producing segment of the industry by imposing unrealistic ceiling prices on our domestic crude oil production. By unrealistic, I mean as related to world prices for crude oil of similar grade and quality. This leaves the producing segment with only two sources of capital—net profits and borrowed money. It is quite apparent many Congressmen and Senators feel that the so-called major oil companies should earn no profits or if they do earn profits that surge upward, in 1 year and 1 year only, because of nonrecurring conditions, then such profits are loudly trumpeted as being obscene.

As to the venture capital market, the passage of this bill would either dry that up or make the costs of such capital prohibitive.

This dismemberment also poses the beginning of the end of the American dream. That is the dream that most young men have at one time or another that they can grow as big as their ability, their training, their ingenuity and their initiative can carry them. No longer can boys like the Phillips brothers ever hope to become the Phillips Petroleum Co. of today. No longer can a fuel truck driver, in 1934, by the name of Leon Hess grow until he puts together what is now Amerada Hess—one of the 19 major oil companies which this Congress is seeking to dismember.

In brief, if this legislation is passed, it will undoubtedly spread to other industries and by so doing, we will have put a ceiling over the head of the American dream.

I am quite aware that these latter remarks may be construed as being emotional and the words better used in a campaign address for an office seeker but they, nevertheless, represent the thinking of a man like myself who has been an independent all his life—like his father and his grandfather before him. I am quite aware after 30 years in this town that the voice of one witness means little but I will at least have the satisfaction of knowing that I have lit my one little candle and can only hope that the members of this committee and this Congress will look at the facts and not the unsupported findings before attempting to destroy some of the best insurance we have for adequate supplies of petroleum energy for ourselves and generations yet unborn.

Senator HRUSKA. Mr. Ellis, I was greatly heartened to note your remarks in connection with—having read the bill before us, the principal one—S. 2387. I am sorry to say that some of our witnesses who appeared before us spoke thoughts, and read words or spoke words that sort of betrayed their idea or even their desire to read the text of the bill.

You are familiar, through long years of experience, both by way of participation and by way of observation, with how bureaucracy works and can work, what its limitations are, and chiefly that the passage of a law decreeing and ordering something to be done does not necessarily mean that it will be done or that it can be done.

Yesterday and the day before we had testimony from people who concerned themselves with the mechanics of the divestitures that are prescribed in the act, directed to some 19 or 20 major entities in the petroleum industry which are the leading objectives and subject matter of S. 2387. Just by way of refresher and so that you will have the same background for an answer to the question as I have for the question itself, those 19 or 20 companies have total assets of $146 billion. Their long-time debt is about $21 billion. Total stockholders' equity, at book value, is about $75 billion, and the market value of the common stock is probably $77 or $78 billion.

Each one of them is an entity which has a structure that is vast geographically, most of them global in proportion. It is an intricate interrelation of many activities, including vast, almost an astronomical amount that goes into research and development and also in exploration and in some pure science seeking to develop and improve the technology of the various activities of the petroleum industry.

Now, as against that background, Mr. Ellis, we have a bill which says to the FTC, a very modestly sized bureaucratic outfit as we know bureaucracy here in Washington, and that FTC is ordered within the space of 36 months to achieve the miracle of splitting up those 20 big companies so that there will be four principal segments—the production, the refining, the transportation, and the marketing—without any interrelated connection, one with the other, of those segments, direct or indirect. And it is going to have to be done within 36 months. With that background, can you give us any comments as to the practicability of any such task, whether it be 3 years or 5 years or 10 years?

And I know that with the eloquence you have displayed in your testimony so far you might engage in a little emotion, but if you do, you will be forgiven.

Mr. Ellis. First, in responding to your question as concisely as my proclivity for words will permit, No. 1, let us assume for the moment that all of this nasty, stinking background exists and it is necessary to do this job. It would be impossible for the FTC, if you doubled the force to adequately and properly supervise, to see it done in 36 months.

As a second proposition—and that first as to the mechanics—it is incomprehensible for any man that I am aware of, the most brilliant man in this industry, the most brilliant economist, to tell this committee where the ripple out effect of doing that job would finally end. They would not be ripples—the waves and the backwash would reach to God knows where. How many farmers in the State of Nebraska ever dreamed 5 years ago that the price of oil, being locked in or embargo in the Middle East, would almost double the price of his tractor fuel? That, in essence, is a major ripple that extended from the Middle East to Nebraska. It is washing all over Europe. It is washing all over Africa. Everywhere I went in underdeveloped countries.

Now, if you come up here and split this industry up in this way you are going to wash this economy with a tidal wave such as this country has never seen before. The Depression of the thirties,

in my judgment, would look like a period of prosperity by the time this whole mess got accomplished and the end result of energy from petroleum products finally hit its final peak in the American marketplace.

Senator, what happens every time historically, if we look back, what happens when you try to inject artificiality in the marketplace. Look at the regulations we've got down here at FEA now. The Lord himself with the aid of the 12 disciples, including Judas, can't interpret all of those things. Now, that is just a minor thing compared to what we're talking about here. And you turn such a thing as this over to the bureaucracy to supervise, you have set in motion a chain of events that my great grandchildren will be strangled by. I am not saying that just out of an emotional attempt to kick in the bottom of the sky. I mean that.

Does that answer your questions, Senator? [Laughter.]

Senator HRUSKA. That is a good beginning. [Laughter.]

Mr. ELLIS. Well, you better stop me, because the way I feel about this thing I could go.

Senator HRUSKA. A consideration of the testimony given here in these past 3 days would fully bear out all of these statements which you make, but let us deal with some of the specific.

There is no precedent—this can be said flatly and without any qualifications—for the intricacies and the magnitude of this kind of a proposed divestiture in the history of this country. There just is not, period, with qualification. Sometimes, they say, "Oh but it is simple." And some of my very highly respected colleagues have gotten up on the floor of our forum, and they have said, "Oh but it is simple. We will pass a law, and it will order this, that, and the other thing be done." But that was done in the Public Utility Holding Company Act in 1935. A relatively small operation, relatively easy to deal with because there were geographical units that were composed of separate corporate entities, each of which had its profit and loss statement, its assets and liabilities, and its functioning organization. And the simple proposition was just to assign the ownership of a given amount of stock to new owners and the job was done. It might be oversimplified, but that's what it was. The act was passed in 1935. It was in 1946 before the constitutionality of that act determined, and most of it was concluded in the forties and the early fifties and yet there were some remnants even beyond that before the job was done.

Having that as background, would that lead you to any further comment? Do you agree with me in the analysis of the relative position of the Public Holding Company Act and the proposed Divestiture Act which we are now considering?

Mr. ELLIS. I think that is like comparing a molecule to a dinosaur. I mean, as far as the simplicity of one as related to the difficulty it would encounter in the petroleum industry. That's what I am talking about. It is a difficult thing. But this thing we are opposing here—how are we going to take Mobil and break it up assetwise? If I were a stockholder, and you gave me four pieces of paper that represent what I bought as one share in an integrated company,

how are you going to appraise those assets? I do not know. It is beyond my comprehension. I know one thing—the day this act becomes law I would hurry to dispose of all the Mobil stock I had, because I do not think they can divide it up and give me pro rata part of that business.

Further, this whole business, Senator, boils down to this: We have been listening in this country to demagogic crap aimed at the oil industry and principally the big oil industry for years. There is a wave in this country now anti-big business. There are some within this country now who think we ought to change the spelling of profit so it comes out a four-letter word.

This industry—specifically by political speakers, by people who want to gain quick audience—has found itself indicted, as the oil barons, the monopolistic oil indstry, the oil cartel—dozens of other demagogic phrases. The difficult part the industry faces is how do you come up here and explain to even a congressional committee willing to listen, much less the American public, the workings of a very complex industry as you very adequately described with all its complexities, exchanges, beyond description? How do you come up here with this complex an industry and then with an oversimplified solution try to handle all of those complexities? It cannot be done. In fact, as I've tried to point out, it is not even necessary to be done.

Senator Hruska. Is it between those who propose such a change as this and those who oppose such a change as it is proposed in S. 2387? Upon whom does the burden lie, Mr. Ellis, to prove that the benefits derived from the change are greater than the things that must be sacrificed in order to get those benefits? That is item one.

And two, that the benefits and the assurance of workability of this new plan are greater than the assurances of the workability and the benefits of the present economic and corporate structure of the industry. Upon whom does that burden rest?

Mr. Ellis. In the traditional American way, even in a civil case, the burden for carrying the proponent's position lies on the proponent to do so by a preponderance of the evidence. In a criminal case, and is really what this thing should be described as because it would be criminal if it is passed, then the proof must be carried beyond a reasonable doubt. Certainly the proponents of this legislation should prove before we go forward with it with all of its implications, beyond a reasonable doubt, that the benefits will far outweigh the adverse implications for the general American public and our future energy needs.

Senator Hruska. The workability of our present system is a fact. We know that it works. There are some that are unhappy with some of its consequences. There are some that feel that the directors and the managers of that system are ravacious people, greedy, imposing upon the public and wanting to do more of that imposition. But nevertheless, it is a workable system. The benefits that flow from that system have been demonstrated. Is there any way, Mr. Ellis, that the workability and the benefits of the proposed system can be proved, without actually engaging in a course of conduct under that bill enacted into law, in which event, it would be fastened on the necks of America from there on in because the change back to the present system would be totally irretrievable.

Is there any other way except trying it with that vast risk, in order to prove its workability and its greater advantages?

Mr. ELLIS. There is no other way, in my judgment, to prove it will or will not work, without enacting it into law. And, frankly, Senator, I have seen so much threatening of this industry by some orbit-brained people in the last few years that several times I almost came to the conclusion that what we better do is just go ahead and let them do it, to show them what a darned fool idea it is. But, unfortunately, in this case, the damage would be so great, the injury so irreparable, that we could not restore it any more than you can put a broken egg back together. It would be impossible to put back together, if this were put into effect.

Senator HRUSKA. Previously we spoke of the interim between the enactment of the law and the time in which it could be implemented, if that is possible at all. In the *Loew's Picture Co.* case, a moving picture company case, a company that had $218 million worth of assets, the court said it must be finished in 3 years; it took 7. We spoke of that interim. The interim, according to respectable testimony in the record now, could be anywhere between 10 and 20 years, and it is not beyond the possibility of 25 to 30 years.

Let me ask this question: What will happen to the efficiency and the productivity and the availability of petroleum products in this country under the present arrangement during that interim?

Mr. ELLIS. It frightens me to death to even think of it. I could go into instance after instance, but during that period of time, for example, if one company, Exxon, the biggest, decided, we are going to be a producer. They may not even decide that. They decide to buy Sears Roebuck after they have sold out.

But let us assume they are going to sell the service stations they own in this country. For them to be forced to sell those service station properties in this country within 3 years, would amount to depriving them of their assets without due process of law because they would have to sell at bargain-basement prices. They would be forced to. Who could buy them all? Only one group where somebody put together enough capital to say we are going to be the Exxon of marketing, so we are going to buy all of their assets. This thing is just incomprehensible to me. What is happening is an attempt to apply simplistic solutions to complex industries.

And I will not say that this industry has not had its problems for the 15 years I represented the jobbers as a trade associate. I was at a major oil company once a week, battling for them. There is always differences between buyer and seller. The seller wants to sell as high as possible and the buyer wants to buy as cheap as possible. And me representing buyers, why, I fought them. But I never came to Congress and asked Congress to do anything about it. If I was armed with the facts, I sat down with them and it may have taken a lot of months, but we hammered something out. I do not mean to imply we broke any laws. Everybody in the industry knew what we were doing.

But this thing here, Senator, to do this in an orderly manner, assuming that it needed to be done, to do it in an orderly manner would take about as long as it took to get to its present position, and that is well over 50 years.

Senator HRUSKA. Now, the funds for exploration and development and research, and things of that kind, have, more historically, come from the internal earnings of the corporations, the oil companies that have engaged in that type of program. In more recent years, we know from the testimony that we have here, that less and less dependence is now upon internal earnings and more and more upon borrowed money. That will reach astronomical amounts now for borrowed money, if the producing end of the business is deprived of that portion of the internal earnings and profits of the other three segments, which it will have to spinoff or sell. And, therefore, there will be a greater reliance upon borrowed money.

In your judgment, how much confidence would an investor at that juncture have of lending money to a company which doesn't have nearly the earning power it had before, and which must have it in order to continue its program of exploration, development, and improvements of technology and research and development, and so on.

Mr. ELLIS. In my judgment, an enlightened investor simply either would not invest in as hazardous a business as production is, or if he did invest, it would be at such loan costs that would render it prohibitive for the producing company to get the money. In my humble judgment, since they now must either look to net profits which the public and some Members of the Congress apparently do not want them to make, or they must look to the money market for venture capital for their assets. The end result is going to be, if you split this thing up and you do not have the overall assets of an integrated company to back up what is behind that loan in the money market, what you are going to have is, there is just going to be less money borrowed, less profit made. End result—less drilling for the finding of the oil reserves we need.

I do not think anybody in this country, I do not care who the Congressman or Senator is, would disagree with the proposition that the ideal or the Utopian thing as far as oil and gas in this country is concerned, would be for us to have within the United States or offshore control, all of the oil and gas necessary for our domestic needs. That is the idea.

Now, then, we have not got it right now. We have not got it. We can be cut off tomorrow from some of our suppliers, if we do one more thing the Arabs think is foolish as far as Israel is concerned. We can be right back with the embargo. Canada, without any reason such as the Arab-Israeli dispute, is already engaged in the process, and has given us notice, they are going to continue reducing exports of their oil to this country. Where are we going to get it, unless our nationals, our own producers, go out here and find it, hopefully, as close to this country as we can. How are they going to get it? It takes money. It takes big money to go out with an offshore drilling rig and look for that oil. To give you some idea of actually what is happening in that area, it might be enlightening to the committee to know that the seismic crews, the people who go out, the geologists, make the seismic examination before determinations are made where they are going to drill, if and when they get the right, and the money to drill there. Seismic crews, in the last quarter, activities

have dropped 25 percent. If you will go to the companies in this country who are making, manufacturing the offshore drilling rigs they are manufacturing now, but with only the backlog to date of orders, no new orders are coming in.

If you will go to those who manufacture the offshore platforms, where the piping is put in after the oil is found, their production platforms, those people are manufacturing platforms. But what is being done, the companies are beginning to prove up these new findings but they are slowing down discovery drilling for lack of money and maybe the threats hanging over their heads by this Congress. The long-range wildcat discovery activities—there is where our supplies of the future are coming from. When you take a barrel of oil, or 1,000 cubic feet of gas out of the earth, it is irreplaceable. It is not like my corn crop, where I can save a bushel of seed corn, and go plant some more next year. You cannot take a barrel of crude oil and drop a teaspoonful in a furrow 1 foot apart and grow a barrel of oil next fall. You have got to find something new. Who is going to come up with the billions of dollars that any knowledgeable person will tell you will be necessary to help us replace even what we are taking out of the ground, much less add to our present balance of proven reserves, to take care of the increases that our future economy will require.?

Senator HRUSKA. Mr. Ellis, we are importing into this country, about 40 percent of our needs of crude oil, is that about right?

Mr. ELLIS. My understanding, about 40 percent.

Senator HRUSKA. And that is under conditions in which production and efforts to explore and produce more are still continuing; perhaps not as much as we would like them.

Let us suppose that this proposed bill, S. 2387, becomes law and there will be the start of this long interim of litigation and the implementation of law, whereupon there will cease, as you have pointed out, even the level of activity for production and for exploration which we now have. There are grave considerations in the field of national security in that event. Because however happy we might delude ourselves into being, by reason of detente and so on, it is a wise general, indeed, who provides for a means of retreat: it is a wise general, indeed, who says maybe if I have a better war machine than the other guy, war will not be started.

In the event of hostilities, in the event of a national emergency, what impact will there be upon the country that will be dependent, not 40 percent on import, but even more than that before a considerable portion of this interim to prove workability expires. And is it not true that if the pinch comes and the war machine needs petroleum products and there is no input from imports, it means the war machine gets priority and even the domestic economic and industrial worlds within America will be No. 2. And wars are won: (1) On that big first effort; and (2) upon the production of arms and upon the production of equipment and so on.

With those few brief words of opening a subject which is tremendously important for the future of America and a free world, would you like to venture any thoughts in that direction?

Mr. ELLIS. From the standpoint of national security, for this bill to be put into effect, I shudder at the position we are going to be in.

In fact. I shudder even with the going industry as we have today, which demonstrated, in two previous occasions, an ability to somehow keep our productive economy going and the war machine going.

The security of this country—not just this country, but the free world—would be in, not serious jeopardy, it would go down a rat hole, let us face it. Who is our most likely enemy? Somebody who could probably bottle up the supplies in the Middle East; who controls access to the oil of the Middle East, in my judgment, controls the future peace and economic existence of the world, until that source can be replaced by other sources available to the free world.

What happened in World War II? A lot of that oil was not available to Europe. With the aid of the Navy, with the aid of the oil industry and its transports, we were fortunate in somehow running blockades to supplement our supply with that from Venezuela. Now, with modern submarine warfare, I do not think Venezuelan oil would be even brought to our country if they were willing to let us have it.

If the Middle East is cut off, Europe is left with only what we have or what maybe they can get from the North Sea. Where else is it going to come from if they bottle up that Middle East oil because there is little or no crude oil in Europe? Their principal sources are Middle East, Venezuela, North Sea, Indonesia, other places. If that is cut off, some way or another, we have not only got to run our own military and our own productive economy, but we have got to run that of the free world. How will it be done? It cannot be done. We have got to find more oil and gas in areas where we can get at it when we need it. If any monopolistic tactics start functioning, we have got a Congress up here that can do things about that and pull it back.

But we need to encourage this industry, not keep them hanging with a sword hanging over their head, where they will go out and search for and, hopefully, find all of this oil and gas we so badly need, peacetime, wartime, or anytime.

Senator HRUSKA. Of course, Mr. Ellis, with your reference to Congress, of which I am a Member and proud to be a Member, your characterization was that far too many Members of that body are concerned with whether there will be a 2-cent increase in gasoline tomorrow, rather than what may happen in a year or 5 years or 10 years or in the event of a national emergency. And that is one of the problems, is it not?

Mr. ELLIS. Yes, sir. And I believe my statement says that the public, as well as many Members of the Congress, are equating this whole business with what effects it is going to have on gasoline. I will give you an example. When I spoke in St. Louis on September 22, on September 21 three press interviews were requested of me, two of the leading newspapers, and one a national radio chain or television, I don't know which. The questions put to me by these enlightened people from the finance sections of two newspapers, not Mr. Average Citizen, were: Well, what effect is this going to have on the price of gasoline? And that is all they were concerned with.

Senator, that is the alarming thing to me. If everybody in the country knew what I think I know about this industry, I would not

be worried about it because they would be telling Congressmen and Senators what their thoughts were. But the public has been led to believe—and they are reflecting that in the political arena, apparently—that all of this price thing is the cause of the big oil companies. They were told by some of the media, some supposedly big columnists of some of the bigger newspapers, that there was no real shortage, that it was a shortage, if any, contrived by the major oil companies to make more money. All of this demogogic poppycock has been spread all over the public, and they do not know who else to blame.

This Congress has been told for more than 25 years, in one hearing or another, if for nothing else on the depletion allowance, that it was necessary, and what was coming. The Congress recognized it over 4 years ago. Now, it is time that the people really knew what we are facing and would reflect those viewpoints in the political arena.

Yes, I will say it. And I know, after 30 years in this town: you should not ever say anything in front of a congressional committee that is critical of any Congressman or Senator, but I hate to see it. But I am very fearful that too much political hay is being made over this issue without telling the American people what the truth is.

Because I have an abiding faith that, when Mr. John Q. Public, sitting out here at the crossroads, gets the facts, he will elect and do, sooner or later, what is necessary to be done. Yes, the political arena is too full of what I consider, maybe wrongly, as some demagogic charges against an industry, and it is being trafficked on. And if there are enough of them successful in doing it, we are going to break this Nation apart, if this thing is passed.

Senator HRUSKA. This is a final question of this series, as far as this Senator is concerned.

The bill is drafted as against findings and a declaration of policy which is against the background of the existence of a monopoly, an oligopoly or whatever it is. And there is the express finding that existing antitrust laws have been inadequate to maintain effective competition in the petroleum industry.

Among your statements in your testimony today is that: "All over the place, we see growth and advancement of the independents." And then you recite: "In the last 25 years, 50 refineries have come into existence. At marketing, 15,000 oil jobbers, several thousand more independents, exclusively engage in distributing home heating oil and approximately 150,000 independent service station operators," et cetera.

If the laws are inadequate, if there is a monopoly, and monopolistic power is held by a small number of big companies, why in the world do they not stamp out of existence that competition which is afforded by these independents? Is it within their power to do so, and why have they not done it if it is? What do you think?

Mr. ELLIS. As I pointed out in my statement, the 19 companies certainly have the power to wipe it out in a week. In fact, less than 19 companies can wipe it out, if there are no restraints. As you point out, the policy states there are inadequate legal restraints. Then it must be self-restraint because it has not been done. They have not wiped them out.

If the laws are inadequate, then the Congress enacts laws; put adequate laws in. But we have got a Department of Justice we have had down there to enforce such laws. We have had an FTC that, for most of the years I have known them, have had a gleam in their eye to tear up anything big. They have not torn it up. Was it because the laws were inadequate? Not in my judgment. It was because there were inadequate facts to support prosecution of those laws effectively against this industry. It is inadequacy of existing facts warranting a breakup of the so-called oil monopoly, not inadequate laws.

Senator HRUSKA. I thank you. Mr. Ellis, you have come here well qualified. You have been on the inside of the bureaucratic workings and the machinery of this Nation's Government. You have been in the private sector, representing clients and constituents that are very much in the middle of this whole picture. And you have maintained a firm contact and a current knowledge of things as they are, by reason of your representation now on a global, international basis. For that reason, in my judgment, your testimony will be considered and scrutinized carefully, diligently and, I think, fruitfully.

Mr. ELLIS. Thank you, Mr. Chairman.

Senator HRUSKA. Have you any questions, Mr. Bangert?

Mr. BANGERT. No questions for Mr. Ellis.

Senator HRUSKA. Dr. Measday?

Dr. MEASDAY. No questions.

Senator HRUSKA. There are a number of questions which Senator Thurmond has submitted in written form, directed to Bill Brier and also Mr. Ellis. They will be referred to staff who will process them in the regular way.

That is all for you, Mr. Ellis, and you are excused. And, again, we thank you for coming.

Mr. ELLIS. Thank you, Mr. Chairman.

Senator HRUSKA. The Chair would like to announce that we meet tomorrow in this room at 1:30 p.m., Instead of at 9:30 as originally scheduled. This will complete the 5 days of hearings under my chairmanship and presiding.

On February 18, we will have 1 more day of hearing. I announce at this time, that all persons wishing to submit written statements should do so by February 18, unless the Chair or the committee directs a different closing date for receiving such statements or any additional material.

On January 30—that is on Friday of this week—the Senator from South Dakota, Senator Abourezk, will chair a meeting on this bill, S. 2387. And on February 3, Senator Tunney will chair a meeting on this same bill.

Anything further, Mr. Counsel?

Mr. BANGERT. No, Mr. Chairman.

Senator HRUSKA. The hearing is recessed until tomorrow afternoon.

[Whereupon, at 4:35 p.m., the proceedings were recessed, to reconvene at 1:30 p.m., Thursday, January 29, 1976.]

VERTICAL DIVESTITURE IN THE PETROLEUM INDUSTRY

THURSDAY, JANUARY 29, 1976

U.S. SENATE,
SUBCOMMITTEE ON ANTITRUST AND MONOPOLY
OF THE COMMITTEE ON THE JUDICIARY,
Washington, D.C.

The subcommittee met at 1:55 p.m., in room 2228, Dirksen Senate Office Building, Hon. Roman L. Hruska presiding.

Present: Senators Hruska and Thurmond.

Staff present: Charles E. Bangert, general counsel; Henry A. Banta, assistant counsel; Walter S. Measday, chief economist; Patricia Y. Bario, professional staff member; William E. Kovacic, staff member; Catherine M. McCarthy, chief clerk; Peter N. Chumbris, minority chief counsel; Emory Sneeden, minority assistant counsel; Garrett Vaughn, minority economist.

Senator THURMOND. The subcommittee will come to order.

I have got to be in Armed Services in just a few minutes, but we just want to welcome all of you here, including the South Carolinians back there, Mr. Jackson and Mr. Marlin and any others.

Senator Hruska will be here just in a few minutes to preside. In the meantime, we can get things started.

The first witness will be Lewis Kruger, and you may proceed if you are ready.

Mr. KRUGER. Thank you very much.

STATEMENT OF LEWIS KRUGER OF THE LAW FIRM OF KRAUSE, HIRSCH & GROSS, NEW YORK, N.Y.

Mr. KRUGER. Mr. Chairman and members of the committee, I appreciate the opportunity to appear here today to discuss some aspects of the proposals before you, which require vertical divestiture of vertically integrated oil companies.

My name is Lewis Kruger. I am a member of the New York law firm of Krause, Hirsch & Gross; and in addition, I am a lecturer in law at Columbia Law School. I am a graduate of the Harvard College, where I majored in economics, and of the Columbia Law School.

Let me at this point interrupt the flow of my testimony merely to tell you that I have been retained as a consultant to the subcommittee, and I am testifying in that capacity as a consultant to the subcommittee.

My own special area of knowledge with respect to the law, to the extent that I have any, is in the field of corporate reorganization. And my law firm, although it is not general counsel to any specific lender, acts often and regularly as counsel to both bank lenders. factors, commercial lenders, and others in the field of commercial finance.

I might add that the subcommittee has sent a questionnaire to the oil companies requesting information from them, and substantial responses have been received. I must confess that I have not read all of the information that has been provided by the oil companies. On the other hand, the oil companies have not provided all of the information that was sought.

But in any event, on the assumption that vertical divestiture of oil companies is a desirable goal, and on the further assumption that it were enacted into law, could it be feasibly applied to the existing domestic major oil companies, without substantially and materially affecting their existence. And would the dislocations of the interests of debtholders and equityholders be within reasonably acceptable ranges? That is the question which I wish to address in my remarks.

There has been a long history of voluntary vertical divestiture of complex corporations in the United States. Public corporations have actively engaged in the business of divesting themselves of associated companies, subsidiaries, divisions and substantial assets, sometimes for liquidity; sometimes as a swapout for another company either more closely related in nature to achieve economic integration, or obversely, to achieve diversity and economic balance. These transactions have run the range from the sale of fully integrated companies to the sale of specific assets, and the purchase prices may have included cash, shares, notes, or other obligations of the acquiring corporation.

A survey of Fortune 500's largest corporate entities and how they got there, amply illustrates the foregoing. Each transaction alluded to invariably affects the operation, going concern values of the selling entity, the acquiring entity, and the purchasing entity, and materially affects the rights and the value of the interests of the respective securityholders. Where the parties to the transaction are public companies, the marketplace will evaluate the transaction and securities of either party will rise or fall, depending on the perceptions of economists and traders as to who obtained the more favorable result. These transactions invariably result in changes in the operations of each party and often affect earnings performance. The marketplace will, either before or after the fact, revalue the enterprises as prognoses of analysts, economists and the related trade view the transaction. The velocity of such transactions have been largely inhibited and sometimes dictated by existing antitrust, antimonopoly, and tax legislation, with all of which the corporate enterprises have managed to cope successfully and still retain and maintain their existence and financial stability.

Where debtholders of a corporation are unsecured by the assets of either the subsidiary or division to be sold, then under the assumption that the sale is for a full and fair consideration, in theory, their rights are unaffected by the sale, since an asset of their debtor has merely been exchanged for some other asset of comparable

value. The value of their debenture, however, may rise or fall, depending on how the marketplace views their debtor without the disposed assets, but with the new cash or other consideration. When the debtholder is secured by the asset to be disposed of, then his debt may be transferred with the asset to the acquirer, or the debtholder may be paid in full, or if the disposition was of only a portion of his security, he may be paid some portion of his debt. The actual transaction will be determined in large part by the agreement between the debtholder and his debtor.

Why companies and their assets are bought and sold is a complex subject by itself, but suffice it to say that the usual reason is a determination by management that it can improve its performance or position in its market by disposing of or acquiring some asset. The sixties have seen the growth of conglomerates through these referenced transactions; the seventies have seen their decline and the divestiture of acquired companies.

Further, corporations have not infrequently divested themselves of portions of their businesses by spinning off subsidiaries or divisions. The usual spinoff has been effected by the delivery by the parent corporation to its shareholders of the shares of the subsidiary. Sufficient distributive shares would often be generated through recapitalization of the subsidiary. Where the segment of business to be spunoff did not have separate subsidiary corporate existence, a new corporation would be created as a wholly owned subsidiary, which would then acquire the operation to be spun off in exchange for its stock, which would then be distributed to shareholders of the parent. In each of these situations, the rights of shareholders are, in theory, unaffected, although, again, the marketplace may value the aggregate of outstanding shares of the two separate companies that result as more or less than the value ascribed to the aggregate stock of the single company.

The rights of debtholders, whether secured or unsecured, are dealt with as I have described above, with respect to mergers and acquisitions. All of the activity which I have described in general terms should provide us with a measure of comfort, in that we are not without the requisite legal, accounting, and financial expertise to accomplish complex corporate transactions of substantial magnitude without making economic tidal waves and without transcending the constitutional limitations of due process and deprivation of property rights. These have been accomplished in the main, without denigrating the rights of shareholders, debtholders, or other creditors and where the rights of shareholders, debtholders or creditors have been affected, our judicial system has adequately dealt with these situations.

In addition to this continuing dance of business activity, courts of law have, from time to time, decreed divestiture. The judicial based divestitures usually are the result of actions of Federal agencies, most typically the Department of Justice. It is quite true, however, that divestiture of the scope proposed in the legislation you are considering is of an order of magnitude greater than that ever undertaken in our prior economic or legal history, but recognize, if you will, that the multinational and multifaceted corporate enterprise is itself without precedent.

Let us assume, for the moment, that S. 2387 has become law and that divestiture must ensue. Each oil company has a unique corporate financial structure, and each would have to structure for itself the divestiture program that is most fair and equitable to its investors, institutional lenders, and other creditors and meets the legislative mandate.

Management would have to begin by looking at the company as divided into the four separate functions of production, transmission, refinery, and marketing. The companies auditors would have to prepare balance sheets, or initially, schedules of assets for each of the four basic functions, and, in addition, cash-flow projections by function. Further review would have to be undertaken by counsel for each oil company with respect to the rights and obligations of the companies' equityholders, lenders, secured and unsecured creditors and those with whom the company has entered into a variety of agreements.

With this information at hand, the management of each oil company would have several decisions to make. First among these would be the question of whether or not it is feasible to establish a great number of integrated oil companies out of each oil company so that the market share or refinery capacity or other tests would be met so that conceptually, there might be a large number of small integrated producers. If this was not feasible or desirable, management might then consider the next step, which would be the splitting up of the company into its four basic functions as defined by the proposed legislation. The concomitant of this would be that after having made that decision, management would then be required to make the second decision as to which function of the currently integrated oil company would be retained.

To the extent that management has determined to divest three of the four functions and identified which functions are to be divested, it would then become necessary to devise a plan accomplishing that result with a minimum dislocation of the rights and obligations of the company, its equityholders, lenders and others. It is not possible, without obtaining all of the information suggested above, to suggest an appropriate course of action for any specific company, but some general conclusions may be drawn.

Certain portions of the business of the oil company to be divested might well be sold or exchanged in the typical corporate sale of assets or subsidiaries. If, for example, company A is determined to divest itself of its refineries, company B is determined to stay in the refinery business and is interested in company A's refineries, then it might offer to acquire company A's refineries either for cash or notes or equities, and to the extent that equity was received by company A, it might distribute that equity among its shareholders. If the sale was made on a cash basis, then the cash realized might be used to pay creditors, secured or unsecured, of company A or for working capital in company A's divested functions or retained area, or both.

Obviously, there is no clear mechanical approach to this problem. For example, an equityholder who has 100 shares of company A which then vertically divests itself and forms companies 1, 2, 3, and

4, and in exchange for his 100 shares of company A has received a comparable pro rata distribution of the shares of each of companies 1, 2, 3, and 4, may be said not to have had his rights affected since he has an equal equity interest in the earnings of four entities which previously made up company A as he had in company A.

In point of fact, however, depending upon the nature of company A, its assets, liabilities, management, capital needs, earnings potential and the like, it may well be that in order for the equityholder to have received fair and equitable treatment, he should receive 30 shares of company 1, 30 shares of company 2, and 20 shares each of companies 3 and 4.

What will be required in order to answer this question, as well as the treatment of debentureholders, lenders and other creditors, will be some consideration of the values of companies 1, 2, 3, and 4. One would be required to project an earning stream for each of the four separate companies as well as a pro forma balance sheet for each of the four separate companies in which liabilities of the originating company A, in my example, would have been apportioned. One might then begin the task of matching the rights of the equityholders and lenders and others with the assets and prospective earning capacities of the respective four functioning companies. The general question of the fair and equitable treatment of affected persons has risen in a variety of contexts and on many occasions. Let me mention a few examples.

First, the lawsuit to enjoin the sale by a company of a subsidiary, division, portion of its business or certain assets on the grounds of inadequate consideration requires a determination of the fairness of the purchase price. Expert testimony is usually adduced by the proponent of the sale as well as by the plaintiff seeking to preclude it as to the value of the asset or enterprise to be sold. Appraisals are made, where appropriate, and expert witnesses testify with respect to them. Similarly, under a variety of State laws, dissenter's stock may be valued where a dissenting shareholder objects to some proposed corporate action. Many courts have taken testimony with respect to such values, and in the course thereof, have valued ongoing businesses as well as portions thereof. In this regard, I've cited a Law Review article at 79 Harvard Law Review on page 1453.

Further, shareholder derivative actions brought under common law and class actions brought under the provisions of the Securities and Exchange Act have often required courts to determine values of ongoing businesses. It would appear here that through the utilization of auditors, counsel, appraisers, representatives of the financial community and others with related skills, management of oil companies will be able to produce divestment plans which will meet the requirement of S. 2387 so that the Federal Trade Commission may find a plan or plans of divestment to be fair and equitable to affected persons. With all of the best of intentions, however, and with the participation of the most skilled and knowledgeable auditors, counsel or members of the financial community, the proposed method of divestiture in order to achieve vertical divestiture, as provided for in the legislation, will unquestionably give rise to disagreement, and perhaps in some instances, litigation.

S. 2387 anticipates the possibility of litigation when it provides rights in the Commission to institute legal proceedings to accomplish the legislative mandate. Unquestionably, the decisions of the Federal Trade Commission as to what is fair and equitable in the plan or plans of divestment presented by each of the major oil companies, and we must assume that each oil company would submit, based on its structure, a different plan or plans, will be subject to legal review. Such legal review as to what is fair and equitable is not without precedent, and the Commission, counsel, and the courts will have available Federal and State court decisions on the basic issues of valuing business enterprises on an ongoing basis as well as determining fair and equitable treatment of affected persons.

During the period that such litigation might be in the courts, until a final and nonappealable decision is rendered, a period which I recognize would be extensive and expensive, the problem of financing the enterprise is not insuperable. With respect to the assets being retained, the usual channels of long-term financing would still be available to the company even though recognizably on a reduced basis. For additional financing and as long as the operation continues as a complete whole, short-term financing, again a customary form, should and would be available to the company until such time as a final and nonappealable legal decision is rendered.

One should note that assuming the fair and equitable divestment were to be implemented, then it might well result in the components divested by a vertically integrated oil company continuing to be owned by essentially the same shareholders and having the same debentureholders. These shareholders and debentureholders would, after divestiture, unquestionably change thereafter as each determines, in its own interest and in its own perceptions of investment opportunities, whether to continue to retain shares or debentures in each of the divested components or dispose of them through the marketplace.

One of the questions which has arisen during the course of these hearings has been the question of whether or not the oil industry generally would be able to meet its capital requirements after a divestiture. In his testimony before this committee, Joseph Tovey of Faulkner, Dawkins & Sullivan, stockbrokers and investment bankers, argued against the enactment of the proposed divestiture legislation, but noted nonetheless that:

> Where divestiture ordered by legislation was deemed to be a tax-free spin-off by the oil companies of their components, the oil industry would be able to meet its capital requirements.

Whether or not this capital would be made available to divested components of oil companies at greater than present rates of return is not clear. Mr. Tovey suggests that, for example, in the area of refining, capital would probably be forthcoming only at some greater-than-current rate of return, but that the effect of this upon ultimate consumer prices is unclear.

Similarly, Messrs. Johnson and Messick in their prepared statement, which I understand was to have been presented to the Senate on January 21, 1976, to this subcommittee, and which I am told will

be presented either today or at some later date, while not directly discussing the availability of capital to the oil industry after divestiture, do note that:

Whether the impact of divestiture on shareholders would be as serious as some allege is anyone's guess.

One must presume that a plan of divestment which is fair and equitable will result in divested components each able to stand alone and each with sufficient assets and sufficient earnings potential to attract requisite capital. At what rate that capital will be attracted will depend, of course, on, not only the balance sheet of the individual component, but the market's perception of its earnings potential, its management, and its future. I do not mean to leave you with the conclusion that divestiture of the size and nature contemplated by the pending legislation will be free of problems. I do want, however, to leave you with my opinion that such problems are not insoluble, nor have they been without precedent.

Other witnesses have or will have testified as to the desirability and feasibility of such divestiture both from an operating, market and financing point of view. It is my opinion that it is feasible from a legal point of view.

Thank you, Mr. Chairman.

Senator HRUSKA. Mr. Bangert, have you any questions?

Mr. BANGERT. Yes, Mr. Chairman, thank you.

Mr. Kruger, one of the questions raised in previous hearings with respect to the proposed divestiture legislation is the length of time which such divestiture would take, and there have been estimates of from 10 to 20 years that such a divestiture would require, and I wonder whether you have any comments or ideas with respect to the length of time needed?

Mr. KRUGER. Well, I think that the statement that divestiture would take some very lengthy period of time, 10 to 20 years, is usually made within the context of the assumption that litigation with respect to this issue will be pending before the courts for a period of time approximating 15 or 20 years, or whatever.

It seems to me that that is, obviously, not desirable as a result. One would not want to have uncertainty with respect to the outcome of legislation for an extended period of time. That would be unfortunate, I think, for the company and for the marketplace generally, but I would suggest that, perhaps, one way to approach that and to decrease the time of uncertainty would be, perhaps, to amend the legislation to include some provision directing either that Federal courts give any litigation arising with respect to this legislation top priority in court calendars, or, alternatively, it may well be that, perhaps, some special court should be designated for the purpose of hearing arguments with respect to both this legislation and to the divestiture plans which might be proposed under it.

By way of example, there has in the past, with respect to specific legislation—if I recall, I think recently with the various price-control legislations, that there was a special appellate court procedure provided in order to expedite hearings on that subject and expedite legal decisions, courtroom decisions with respect to it.

It would seem to me also that if there were to be that type of expedited procedure through the courts, that not every matter that might arise as an issue with respect to divestiture and this legislation will require a court hearing because, after all, lawyers learn from precedent, and we are always mindful of what courts have done, and we respond accordingly to the extent that courts have made decisions on issues arising out of this legislation, then I would assume that lawyers cognizant of those decisions would either modify the divestiture plans of their clients, the oil companies, I assume, or other interested parties, and try to meet the decisions of the court. I would suggest that with that sort of process that the time frame would be substantially less than that previously suggested.

Mr. BANGERT. So in your estimation, the time concern would really be the litigation of the matter.

Mr. KRUGER. That is right. I would assume that that would be the lengthiest portion of it. I could comment, if you'd like, on the general question of the 3-year limitation within the law for divestiture.

Mr. BANGERT. Yes; I wish you would.

Mr. KRUGER. I have two reactions with respect to what is contained in the law. There are really two separate time frames that are present. One is the year within which to present a divestment plan or plans which is fair and equitable to affected persons. The second part of that coin is that all divestiture must be completed within 3 years from the enactment of the legislation. My own experience with respect to the preparation of plans of divestiture in part, but also in respect to plans promulgated in corporate reorganizations under, for example, bankruptcy legislation or similar creditor/debtor legislation, suggests that in most cases, in chapter 10 proceedings under the National Bankruptcy Act, for example, that a time frame of, perhaps, 18 months for the presentment of a plan from the inception of a proceeding is more likely the average in the United States in court cases of that type.

I would think that that is in part a reflection of the amount of manpower that is devoted to the subject matter. All lawyers, I suppose, and others, act essentially out of economic self-interest in dealing with cases in the private sector, and for that reason, we devote little more than the manpower that the matter warrants. In that situation to the extent that his divestiture is of greater significance and substantial manpower was devoted, perhaps, the time frame could be cut somewhat, but I would suggest that, to me, perhaps 18 months is a fairer time frame for the presentation of a plan of divestment, and that perhaps the 3 years within which to achieve divestiture might be too quick; perhaps 4 or 5 years might be a more appropriate time frame.

Mr. BANGERT. Some of the witnesses before have commented to the effect that present stockholders could not be equitably treated in any spinoff because there is no feasible way to evaluate what is fair and equitable for shareholders. In your statement, in your example, you seem to be saying there that those determinations can be made, and I wonder if you could enlarge on this a little bit.

Mr. KRUGER. Yes; surely. The question of treating shareholders in a fair and equitable fashion really relates to the valuation of a business enterprise on an ongoing basis. If you could make that valuation as to, for example, each of the components of a vertically divested oil company, then you could deal fairly easily with the question of the fair and equitable treatment of affected shareholders. I have testified, and what is in fact the case, is that courts of law and other Government agencies have, for long periods of time, made decisions on the valuation of business enterprises; they have done so in corporate reorganization cases in which the SEC has been involved; State courts have done so under litigation with respect to the valuation of dissenters' rights in mergers and acquisitions of corporations under the control of State law.

In addition, the lawsuit that is frequently brought, as I have described in my testimony, to enjoin the sale of an enterprise usually hinges on the question of determining the fairness of the consideration. Courts again get into the business there of having to make a decision as to the valuation placed on the assets to be disposed of or the business to be disposed of on a going-concern basis. My testimony is to the effect that there is expertise available and three have been court decisions, frequent ones, on the general subject of valuation of business enterprises. I think that the courts could deal with that subject and I think that Government agencies have also dealt with it in the past and could continue to deal with it in the future.

Mr. BANGERT. Other witnesses have testified that if divestiture legislation becomes law, companies affected by the legislation would be unable to raise sufficient capital to finance projects taking place between the time the legislation was enacted and the time that divestiture was finally accomplished. And again, in your statement, you seem to think that short-term financing might be available.

Mr. KRUGER. I think, surely, that to the extent that a divestiture does not take place until there has been a final court determination or a nonappealable decision, if you will, on the fairness and equitableness of a divestment plan, as determined by the Federal Trade Commission, that you would still have an integrated enterprise. An integrated enterprise could obtain, certainly, short-term capital pending the final determination on divestment.

And I would suggest that to the extent that a plan is filed for vertical divestment with the FTC, that a lender, on a long-term basis, seeking to lend to what will become a component of the divested company, may well be in a position to evaluate the assets that will be retained in that divested company, its prospective earnings performance, the effect of the transaction or the interaction between the FTC and the oil company with respect to its divestment plan, and lend, in those circumstances, to the overall enterprise but recognizing that it may be lending long term to a component of that integrated enterprise. With that knowledge in advance, I assume that a lender could structure a transaction that would meet its requirements for safety and rate of return and still keep the companies intact and functioning until an ultimate decision was made on divestiture.

Mr. BANGERT. Well, again, on the capital needs, there has also been testimony to the effect that the industry is going to require large sums of capital in the future for exploration and production, for instance, and that the nonintegrated producer would not be able to command this type of investment since the financial community requires the full faith in credit of the entire corporation. Do you have any comments on that?

Mr. KRUGER. I would think that the individual producing component of any of the major oil companies, which are the subject of this hearing, could find financing for itself in the marketplace. After all, we must recognize that we are not talking about divestiture which will leave us with remnants—I believe that is the word I have seen in some of the transcripts—of now integrated oil companies. We are going to be left with still substantial functioning enterprises which, I believe, will be able to meet their financing needs in the marketplace.

I am not in a position, because it is not really my field, to observe whether or not the individual components may or may not be more profitable in the current performance of the integrated oil company. It may well be, if the marketplace perceives that the separate functioning components are likely to be more successful and more profitable than combined, joined integrated companies, that it may well be that investments will come more readily to the companies than is now the case. I do not think that the negative of that should be accepted merely as a bald statement of the conclusion of the investment community.

It seems to me, further, that to the extent that assets are divided up by each of the integrated oil companies and received by the four separate component functions, it may well be that the production end will receive a greater than one-quarter share of all of the assets of an integrated oil company and, therefore, having received a comparable share of its liability, will find itself very solvent and able to borrow long term on its own asset base.

Mr. BANGERT. Do you believe that financing would have been available for the construction of the Alaskan pipeline had divestiture been passed prior to its construction?

Mr. KRUGER. Let me tell you what I think about that. It seems to me that if the perception of the marketplace is that there is a need for energy, gasoline, oil, the products of refining in the United States and elsewhere throughout the world, and if there are refiners interested in obtaining crude oil for the purpose of running their refineries in order to meet the marketing, the downstream part of their business, and if they know that there is a source of oil available someplace, and if they are precluded by law from forming together to build a transmission facility, that third parties will find that it is attractive to them financially to provide the means of transmission of oil from a producing source to a refining source. It seems to me that that is no different, except by way of order of magnitude between a situation in which independent shipping companies, for example, perceive that there is availability of crude oil supplies in parts of the world and refining capacity elsewhere.

Investors, in those situations, have built oil tankers to act as a transmission facility. Many oil tankers are owned by independent

investors and not only by integrated oil companies. And to the extent that investors have been willing to take that kind of risk—apparently in the recent history not always wisely because I understand that a lot of tankers that have been built are not now on the high seas but rather in drydock because no one needs them any longer; but, that aside, it would seem to me that a third party, recognizing the need to transmit oil from a producing source to a refinery source, will be in a position to create a transmission line or a pipeline, and he may indeed have to look to the agreements between the producing source and the refining source to aasure him that there will, in fact, be oil flowing through the transmission line that he intends to build. But I assume that that is no different than buyers and sellers getting together now. We do not have to focus only on the oil industry as an example of that. I assume that if a product is grown or is manufactured someplace in the world and if there is a market for it someplace else, people are commonly in the business of transmitting the product from its source of production to its source of sale.

Those are always things that have been done by private enterprise, I suppose since the Phoenicians, and it is still being done today. A lot of maritime commerce exists as well as other kinds of transmission. We built rail lines, I assume, in large measure for that purpose and I assume we would also find people willing to build transmission lines. I do not think we have to believe that transmission lines would not be built after divestiture.

Mr. Bangert. Well, at least as far as the tankers are concerned, it turned out that that was a considerable risk that someone took.

Mr. Kruger. That is right. I think they did do very well at the inception of the recent tanker building program but apparently that is not the case any more and there is now an abundance of available tanker facility and nobody really wants them. But that is an economic risk that was made by reasonable men's judgment, right at the beginning, apparently wrong at the moment, but I am not prepared to say and, I suppose, nobody else is either, whether it may not be a good idea in the future. They may yet find a marketplace for the facilities that they have created. But that is no different than an investment community always evaluating the risks of a business investment.

Mr. Bangert. If divestiture legislation is enacted and one of the real concerns is the effect that it will have on the pension plans of the various integrated firms, and I am wondering if you have an opinion as to what effect it will have on the beneficiaries of those pension plans under current law.

Mr. Kruger. Well, I am not—and I must confess—an expert at all in the pension laws either past or current that have been enacted by the Congress, but I do know this at least: That obviously, the plan of divestment that would have to be presented by a company might well affect the rights of pensionholders under the pension plan the companies have in existence now. To affect those rights, I gather, may be violative of other Federal legislation at this time. Surely, I do not want to suggest, and I do not think anybody else wants to suggest, that we should deprive pensioners of their rights in pension plans. At the same time, I do not think that should be a deterrent to the enactment into law of this legislation if the Congress believes

that this is desirable legislation; if the only way to accomplish the result of both having legislation enacted, and protecting vested pension rights required some modification of the Erisa law or other laws, then I assume that the Congress, if it saw fit to do so, could amend those laws to permit that to be accomplished.

Mr. BANGERT. Visualize the divestiture legislation being passed, what happens to the boards of directors and management on that effective day of divestiture? What happens to those guys?

Mr. KRUGER. Well, I think that that is a good question and I do not think the legislation deals with it, at least in my mind, adequately. It seems to me that on the day that the divestiture occurs, that you cannot have suddenly springing into existence four components of an integrated oil company absent a board of directors, corporate officers, and the like. And I do not know if a plan of divestiture, as it is contemplated by the current legislation, includes an idea that a board of directors or a management will be named as part of the divestment plan. It seems to me that the legislation, perhaps, ought to include some provision that the oil company which is proposing the divestment plan nominate an initial board of directors and perhaps an initial group of officers to serve for some relatively short period of time, perhaps 3 months or 6 months, until there can be an annual meeting of the shareholders of the newly formed component enterprise for the purpose of electing a new board of directors and selecting whatever management it sees fit.

I think to have any other sort of plan might produce a very unfortunate result because, surely, you want stability, initially, in each of the companies and you would want those people who have served, perhaps, on the boards of directors of the current oil companies involved in some of those components initially since they have the experience and the background and are in a position to keep the companies, the components, running on a sound and good basis, at least until there has been that first election by shareholders. I assume that you could not have—but I suppose, technically, you could, but I think it would be difficult to envision, on the day that divestiture became effective for all of these companies, that you would suddenly have a couple of hundred shareholders meetings going on simultaneously, all seeking to elect boards of directors. I think that would be unnecessary burden and you could merely stagger it by permitting the oil company to designate a board and designate officers for each component, giving them some time within which to hold elections and from there on letting the general course of corporate law take its regular place.

Mr. BANGERT. The last area that I would like to cover is that it is our understanding, and witnesses have testified, that certain State laws have requirements for investments by fiduciaries. Would divestiture preclude investment by fiduciaries in the divested entities?

Mr. KRUGER. I am not familiar with all the State laws by any means, but State laws in many States set forth standards for what are called legal investments by fiduciaries. Usually fiduciaries are restricted in their investments by State law to corporations that have been in existence often for a period of time and have certain kinds of performance standards. Some State laws merely tie the legal investment to corporations listed either on the New York Stock

Exchange or some other national exchange. The reason for that, obviously, is that you would not want to have a fiduciary investing in a newly formed enterprise whose future looks unclear or is, at least, not built on a stable foundation. I assume if divestiture legislation of the type that is being considered here were to be enacted, that the investment community and fiduciaries who do invest—for example, banks with common trust funds and the like, in the various States—would not want to necessarily be precluded from investing in the components of these integrated oil companies, and it may well be that State law would be modified to meet the new components and to permit investments in the new components.

For example, the New York Stock Exchange, as I recall—I have not looked lately—among its rules, requires for listing that a corporation have a certain length of time in existence, a certain number of shareholders, a certain amount of earnings, and the like. I would assume that, for example, if you were to break up Exxon, which has 20-some-odd billions of dollars of assets, into four separate components and, just for the ease of arithmetic, if you had each component with a $6 billion asset base and a smaller amount of liabilities, you would have, I would assume, still four very substantial enterprises to which the investment community would like to make loans and purchase equity. And I do not think the investment community would want to be precluded from that nor do I think the New York Stock Exchange would not like to make the market in the shares of the four separate Exxon components. I would think that the stock exchange might amend its own rules and States might amend their laws to permit that type of investment and that type of shareholding.

Mr. BANGERT. Would you give us some sense of magnitude—you mentioned Exxon—of the size of the companies that would be left after such divestiture?

Mr. KRUGER. I did do a little looking at that, not in any very great detail. I am indebted to Mr. Bator of Davis, Polk. In his testimony, he included an exhibit—I think, exhibit 1 [1]—which shows the list of 20 oil companies that he believes to be affected, and gives some idea of their shareholders' equity, number of employees, long-term debts and assets.

I then took a look at the Fortune 500 industrial list for the year 1973 because I recognize that the year 1974 was, perhaps, an unusual year in the sense of oil company profits, in large measure resulted from changes in inventory values and should not be really used as a fair measurement for what oil companies' profitability has been over a long period of time. But if you took 1973's Fortune 500 as an example, and you were to split up—well, if you used sales, for example, of Exxon, Mobil, Texaco—surely, each of those, split into four separate components, and obviously, the result would not be the kind of mechanical division by four that I am doing, but if you were to assume that each of those integrated companies were to result in four separate components, one in production, one in transmission, one in refining, and one in marketing, then each of those Exxon subsidiaries or components would have sales, in my very simplistic example, of approximately $6 billion in 1973, which would place them, in 1973——

[1] See p. 1928.

Mr. BANGERT. $6 billion?

Mr. KRUGER. $6 billion. I think that Exxon had, in 1973, sales of $25 billion which, divided by four, is approximately $6 billion. If you look down the Fortune 500 list, that would have placed them—I am still including them as the No. 3 or 4 company—in the top; each of the components would be in the top 15 of the Fortune 500 companies. Mobil and Texaco are somewhat smaller but each of their components, I would suggest, would be probably doing sales of around $3 billion a year, placing them comfortably within the top 30 or 40 of the Fortune 500 companies.

If you were to take all of the oil companies that are the subject of this legislation and divide all of their sales by 4 in order to produce four separate components following the current divestiture program, then I would suggest that all of the companies would find themselves within the Fortune 250 in sales; most of theme within the Fortune 150 in terms of total shareholders' equity, and total assets.

That is, to my mind, to suggest that the companies—the components that would result from a vertical divestiture— would by no means be small companies. You would still be dealing with very substantial corporate enterprises. I would suggest that, with respect to most of the larger ones, that they would find themselves in the Fortune 100 or the Fortune 150 very well able to obtain shareholder equity as well as attract investment capital.

Mr. BANGERT. Thank you very much, Mr. Kruger.

Mr. KRUGER. Thank you, sir.

Senator HRUSKA. Mr. Kruger, you amaze me when you take a $25 billion sales figure for a given year and very blithely you say, "Well, we'll divide it by 4 and the four components will have $6¾ billion." And that is a big company; annual sales of $6 billion. How much of that $25 billion in sales in any given year were made in the pipeline end of the business?

Mr. KRUGER. I have no knowledge of that, Senator.

Senator HRUSKA. Well, why do you divide by 4? If you do not know, why do you divide by 4? Why do you not divide 15 billion and 10 billion, or 15 billion and 5 billion, and then divide the remainder by 2? Why do you divide by 4 and say, "This is a good basis for saying, 'the divesting companies are still big companies'?" The pipeline does not have 6 billion worth of annual sales, does it?

Mr. KRUGER. I do not know that. I would like to know the answer.

Senator HRUSKA. Well, now, using your commonsense, does it or does it not?

Mr. KRUGER. I do not know. I assume that if there were to be a vertical divestiture, it may well be that it would have.

Senator HRUSKA. Well, if you do not know, why do you divide by 4?

Mr. KRUGER. Because there are going to be, as I understand the legislation, four components out of each of the major integrated oil companies.

Senator HRUSKA. That is right. But why do you divide by 4? Is that on the assumption that each one is productive of income in an equal degree or sales in an equal degree? You must engage in that assumption if you say we will divide it by 4.

Mr. KRUGER. Well, surely I engage in the assumption that each component will have sales. Whether or not they will each have equal sales and each make its own separate contribution to the level of $6¼ billion, I do not know. But if you were going to suggest, as I understand it, that there may be some other division rather than four equal parts, I would still suggest to you that if you were to take even a different division of any of the large oil companies other than in four equal parts, you will either be producing a company, one of the four components, that will again be within the top 10 of the Fortune 500 list and the other three will still be well within the Fortune top 300 list. Surely, their sales are not going to disappear, I would assume, in whole.

Senator HRUSKA. Well, it just seems to me it strains one's idea of commonsense when you divide by 4 when there is no more reason to divide by 4 than there is to divide by 9; no more reason.

Mr. KRUGER. There is a better reason not to divide by 9 because I assume that there are only going to be four components coming out of it.

Senator HRUSKA. All right, then, let us say there is no more reason to say "divide by 4" than to say "one will have 40 percent, another will have 20 percent, another will have 20 percent and another have"—there is no more reason to say 4 than any other combination. And you frankly say you do not know what those parts are making.

Mr. KRUGER. That is right. To the best of my knowledge, there has been no testimony, nor have the oil companies ever indicated what the separate profitability is or sales of their separate divisions.

Senator HRUSKA. Is that an easy exercise?

Mr. KRUGER. I do not know.

Senator HRUSKA. Is that something that could be run off in the computer by simply reprograming it or will it require a lot of business judgment and a lot of theory as to what the potential earnings of any one of these segments is?

Mr. KRUGER. I think it does require expertise and would require a substantial effort of manpower to find it out. But I would suggest that that is not an unknowable number and that, when a company does make a decision on its pricing policy, then, surely, it does have some idea of what its costs are in the various parts of its enterprise, and that probably could relate to the sales prices on the marketing end to something related to its cost. I think that you can know what the cost is of each of the various component sections and from that project, if you will, what the sales might be and what the profitability of those components are. All I am really suggesting is that even if there is a division other than four equal quarters, I think you are quite right, perhaps the division may well be 40–30–30; I do not know.

Senator HRUSKA. Well, considering that pipelines are common carriers, with very rare exceptions, and that they are limited to 7 percent return on their valuation, did you consider that in your allocation of earnings and allocation of sales?

Mr. KRUGER. No, not for the purpose of the example that I gave.

Senator HRUSKA. For any purpose anywhere in your testimony did you consider that?

Mr. KRUGER. Did I consider the 7 percent limitation on costs? No, I did not.

Senator HRUSKA. In regard to the building of the Trans-Alaska Pipeline, you say it would be feasible and it could be done and capital would be forthcoming, and it could be built even without the pledge, I assume, standing only on the assets and the operation and the potential earnings of that pipeline company; is that a fair statement of your conclusion?

Mr. KRUGER. Yes, it is.

Senator HRUSKA. We have testimony here of people who helped to fund and finance that project and they had difficulty, they tell us; they had difficulty raising the capital which is now in the range of some $7 billion; it will probably be $13 billion. It will probably be more, in the final analysis, than $13 billion. They had difficulty funding that so far and they anticipate even greater difficulty without the pledge of the entire assets and earnings of the participating companies. Does that spell anything to you?

Mr. KRUGER. Yes.

Senator HRUSKA. Do you think if there is that great a difficulty with a pledge as additional security, not only for the 7 percent return on the pipeline but also all of the earnings—a pledge of all of the earnings of the big companies that are involved, Exxon, Mobil, Standard, or whatever it is, does that spell any potential for difficulty of getting $13 billion together secured only by the earnings of the pipeline company?

Mr. KRUGER. Yes. I would assume that financing the Alaska pipeline, postdivestiture, will not be any easier than it is now. But I do not think that the fact that you would be dealing with separate producing companies and separate refining companies should make that task any more difficult.

Senator HRUSKA. Well, it is not more attractive as an investment if there is pledged the earnings of the production end, of the refining end and of the retailing end, all of the earnings are pledged for payment of the pipeline obligation? Do you mean that the financing of that pipeline would be just as easy without that additional collateral as it is with the additional collateral? Is that what you are trying to say?

Mr. KRUGER. What I would suggest, Senator, is that it seems to me that the underlying assumption of the proponent of the position that the transmission lines could not be built postdivestiture, is an assumption that the oil companies, on their present form, represent the highest way of delivering an effective and profitable operation. I am only suggesting that it may well be that in their separate component parts, they may perhaps be more profitable and more likely to attract investment.

With respect to the building of the transmission line itself, it would seem to me that an independent third person, the market, or a company, or group of companies that perceive the need for the transmission of crude oil from a producing source to a refining source, will structure a situation in which it will find itself a rate of return for the risk involved that it believes adequately compensates it for the investment of the funds to build that line. Now that is not to say that it may not require the refining company and the producing company to enter into agreements covering the throughput of oil through that transmission line and for the transmission line——

Senator HRUSKA. Do you mean the throughput agreements of traffic on the pipeline?

Mr. KRUGER. That is right.

Senator HRUSKA. That type of agreement?

Mr. KRUGER. I would assume that there would have to be, for a third person to come in and seek to build a transmission line, some recognition or some feeling on his part that there would, in fact, be production flowing through this pipeline.

Senator HRUSKA. That type of agreement would have to be of some duration, would it not?

Mr. KRUGER. Yes, I assume it would be.

Senator HRUSKA. A long-term agreement.

Mr. KRUGER. Depending——

Senator HRUSKA. Have you read the text of 2387?

Mr. KRUGER. Yes, I have.

Senator HRUSKA. Do you remember reading that no long-term agreements are possible between pipeline and producers under this bill?

Mr. KRUGER. As I understood it, that related to the question of control.

Senator HRUSKA. And long-term contracts are specifically forbidden, being a method of control; is that not right?

Mr. KRUGER. That is not my understanding of what the legislation provides, Mr. Chairman. It is my understanding that, whenever you enter into an agreement, surely there is some aspect of control related to that, because the contracting parties are no longer free in all respects. But, as I understand it, one could enter into a long-term agreement that would have some element of control but not the kind of control which I think is the intent of the legislation.

Senator HRUSKA. Mr. Kruger, let me read from page 4 of the bill, starting with line 16. Here is what control means. You may assume that it does this, or may recall that it does that, and all that sort of thing, but we are interested in reality, we are not interested in presumptions and conjecture and wishful thinking.

Here is what control means; here is the term of the bill: "Control means direct or indirect legal or beneficial interest in, or legal power, or influence over, another person, directly or indirectly, arising through direct, indirect, or interlocking ownership or capital stock, interlocking directorates or officers"—and now listen to these next few words—"substantial or long-term contractual relations." And it goes on to say, "loans, agency agreements or leasing arrangements."

Now, tell us, does control fall within long-term arrangements like those which you have just described? In view of that language, what does that language mean?

Mr. KRUGER. As I understand the paragraph entitled, "Control," and the definition of it, I assume it means what it says, in that it means that one must have legal power or influence over another person through, among other things, a substantial or long-term contractual relation. I'm only suggesting that not every long-term contractual relation by itself means that there will be direct or indirect legal power or influence over another person. It depends on the degree of what it is that you have contracted for. Surely if a company were to enter into a long-term contract for all of its production with an-

other refiner, for example, I would suggest that that certainly would meet the control test and would be prohibited by this legislation.

On the other hand, if a refiner were merely to acquire a very small portion of a producer's output, then I would suggest, if he did that on a long-term basis, that surely he would have some modest influence with respect to that producer, but only a very modest one which, to my mind, would not mean legal power or influence of the kind that the legislation addresses itself to.

Senator HRUSKA. So you believe that language to mean that companies in the producing business can enter into long-term substantial contractual relations with the pipeline company, and that that would not be barred by the terms of this bill. Is that correct?

Mr. KRUGER. That is right; not by itself. There would be other tests to be applied, but not by itself.

Senator HRUSKA. It conflicts a little bit with the testimony of the people who have funded large parts of the Trans-Alaska Pipeline, and their conclusions, and they are in the business of drawing those agreements. They are in the business and have had vast experience in actually executing them and making them work, and they say that any long-term contract of that kind is just expressly forbidden by this act.

Mr. KRUGER. I confess I have a different reading of the act than they do, but it may well be that if the requirement——

Senator HRUSKA. I am sure it is a different reading.

Mr. KRUGER [continuing]. Is that there be an amendment to make it clear that if what I am suggesting is not what the legislation does provide, that perhaps it should be amended so to state.

Senator HRUSKA. Well, that is fine. All we would have to do then is to get these two opposing views before the Federal Trade Commission, and then they would decide whether or not that is true, and whichever guess was made, then it goes on to the court, and the court will say, yes, it is included or it is not included. That takes more than 3 years, a proceeding of that kind, does it not?

Mr. KRUGER. Senator, I was not suggesting that this be an issue left to be resolved by the FTC necessarily.

Senator HRUSKA. Well, they have to approve the plan, do they not? Did you read the bill?

Mr. KRUGER. Yes.

Senator HRUSKA. It says the FTC has to approve the plan.

Mr. KRUGER. It surely does.

Senator HRUSKA. It must be a plan that can be executed in 3 years. That is what it says. The FTC has to approve the plan. I would think that the FTC would look at the terms of this law, and then look at the contract, and see if the contract is in compliance with the law. Do you not think that is reasonable to assume?

Mr. KRUGER. Absolutely.

Senator HRUSKA. Then they would have to decide whether a long-term contract of a producer with the pipeline is the kind of control that is mentioned and prohibited in subsection M, is that not right? They would have to make a decision on that point.

Mr. KRUGER. That is correct.

Senator HRUSKA. And whichever decision they make, you say that it would not be a prohibited act, and other witnesses have said it

would be. The FTC is going to have to say one or the other, and whichever they do, we have a lawsuit.

Mr. KRUGER. I would suppose that is correct on the assumption that there is no way to reconcile the two points of view as to the meaning of the language by amending the bill to make it clear.

Senator HRUSKA. Well, leave it to you. I do not know what reconciliation there is. Either the definition of control forbids substantial long-term contractual relationships or it does not. It is a yes and no answer. I do not know how you can reconcile those two positions; one is 180 degrees away from the other. How do you reconcile a situation like that?

Mr. KRUGER. Mr. Chairman, I do not think that is exactly what the legislation says. It does say substantial or long-term contractual relationships, and I am merely suggesting that not every long-term contractual relationship represents a means of having substantial legal power or influence over the other party to the agreement.

Senator HRUSKA. Well, and one side says yes and one side says no, and the FTC is going to have to say yes or no; they cannot say maybe. They are either going to approve that plan with that long-term contract in it, or they are going to disapprove it, and if this is one of the points in it, they will say this is one reason.

Mr. KRUGER. My answer to that would simply be that if that really is an issue, I do not think I disagree with the people who testified previously that this language may not be the clearest, but maybe we ought to say in this that control means substantial direct or indirect legal or beneficial interest or a substantial control. It would seem to me that, as I said before, not every long-term contractual agreement by itself provides for the kind of control that I think is the subject of this legislation.

Senator HRUSKA. We will not argue the point. You have your version of it, and others have their version of it, and I imagine in due time the judge is going to be called upon to render a little decision, and he is going to have to. He cannot guess; he cannot say yes, no, or maybe. He has got to say either yes or no, and then the appellate court will get a crack at it, and maybe they will put that on the preferred docket, and they will expedite the action. But, you know, we have had so many laws in this Congress which say, "And the action described in the within act shall have top priority with the court." How can all of these things have top priority with the court all at one and the same time? Do you know?

Mr. KRUGER. I would suggest that if we really have that many laws that do require that, and if we do have an insufficiently large Federal judiciary to deal with them all, then perhaps the answer is to simply expand the judiciary. I do not think that should be a reason, surely, to either enact or not enact legislation. As a lawyer, I am always told by judges of their large burdens, and I believe it is true that we do have a very busy Federal judiciary.

Senator HRUSKA. One of the first priorities that is asserted is the trial of criminal cases and the decision thereon. Will this be over the priority of criminal cases where a man's liberty or his imprisonment is at stake, and his life in the meantime is wasting away? Will they lay that aside, and give this kind of a contract and this kind of a lawsuit priority over the criminal case?

Mr. KRUGER. Surely not, or in my version, perhaps just add some more judges or perhaps find a separate designated court for this purpose.

Senator HRUSKA. OK. Now, let me read this paragraph which I find difficulty with:

> I do not mean to leave you with the conclusion that divestiture of the size and nature contemplated by the pending legislation will be free of problems. I do, however, want to leave you with my opinion that such problems are not insoluble, nor have they been without precedent.

Mr. Kruger, will you cite us a single precedent of the degree and the nature and the scope of what is attempted in this bill? Any single precedent?

Mr. KRUGER. When I refer to precedents of the kind that I think are relevant to the decisions that would have to be made by a court of law or by the FTC as to fairness and equitableness, the court records are replete with cases on the subject of fairness and equitableness. SEC reorganization reports—I think they number up in the several hundreds now—have gone into the question of valuing enterprises for determinations of fairness and equitableness in reorganization proceedings. But I am talking about the same sort of precedents to which courts now look for assisting them in defining a method of evaluating businesses, because it seems to me that that really is the gravamen of what will have to be known in order to achieve a fair and equitable plan. One must value the enterprises.

It may well be that we have not valued enterprises of the size of those that are before us now for this purpose, but we have surely valued enterprises in the courts of this country; enterprises to my knowledge surely with assets and liabilities well over $100 million, maybe not over a billion dollars or not many, though there were a few, but at least I think there is a sufficient body of law on that subject. And order of magnitude by itself should not persuade us that we do not have the requisite skill and ability to value an enterprise.

Senator HRUSKA. All you are saying is that various fragments of some of the proceedings that will be necessitated by this bill, if it becomes law, have in one way or another been employed and have been used by the courts but have been solved perhaps either by consent decrees or by voluntary agreements. Is not that about it?

Mr. KRUGER. Well, except that more than fractions have been—entire enterprises have been valued on a going concern basis.

Senator HRUSKA. Well, I know, but when we talk about precedents, let us see, precedent for what? Is there any precedent in this country's jurisprudence or in its legislation in which a bill requires a single commission, the FTC, within 1 year after enactment, to approve plans that will be effectuated and achieved within 3 years after enactment, of at least 20 gigantic corporate entities having a total of some $146 billion in assets, some $21 billion in long-term debt, and some stockholders' equity of about $75 billion, widely owned all over the world, and with market value of common stock as much as $77 billion, in terms of the magnitude and the complexity of the component parts, of the component companies here, and the fact that our law cannot be extraterritorial in its operation, is there any precedent for any such enterprise of that magnitude and that nature in our history?

Mr. KRUGER. Let me answer your question by saying no to the general gravamen of your question, but it seems to me that precedent is not determined by magnitude of the enterprise.

Senator HRUSKA. Well, now, do you mean to tell me that the divestiture of the *Loew's* case which was on the basis of consent decree—on the basis of consent decree, mind you—you think there is no difference between the *Loew's* case where we had a company with $218 million and with indebtedness closely held by a few banks of about $30 million, operating under a consent decree, and it was provided in that decree that it should be done within 2 years, and it took 7, do you mean to tell me that that is not necessary? Is there any precedent in that kind of a case with the case that requires a single agency—not many courts—a single agency must analyze and approve a plan that is fair and equitable to all concerned, and the time element is of relation? It is of high essence; that plan has to be approved within 12 months. It must be executed within 2 additional years, and if it is not, very strict criminal penalties will be visited upon the board of directors in person, the officers in person, and upon the corporation. Now, then, in the fact of that, would you say that time and scope is not of any consideration by way of saying there is a precedent for this or there is not?

Mr. KRUGER. If you put me in the position of having to say is there a precedent of this order of magnitude, I would obviously have to say no, but I talk of precedents in terms of legal precedents for dealing with complex corporate structures, and there I would respectfully suggest that there is precedent for dealing with complex corporate structures and for evaluating them. For example, there is a reorganization proceeding now, the case called *Equity Funding*, pending in the Los Angeles area, a company involving assets and liabilities; you may recall the insurance company scandal.

Senator HRUSKA. How long have they been pending?

Mr. KRUGER. Perhaps a year, year and a half, with a plan of reorganization, with values ascribed, with a SEC report to support it. All I am suggesting is that complex corporate structures have been dealt with by the courts in the past, perhaps not of this order of magnitude in terms of numbers, but surely of this order of magnitude in terms of complexity.

Senator HRUSKA. But the courts are not going to initiate this. There is going to be one commission, the FTC, a commission of five members, and they are going to have 20 such plans to act upon within the first 12 months and approve them or not approve them and send them back for correction.

Now, that is not one court taking a year and a half up to date, and I do not know how much longer your example will take before it clears—where one court is devoting its time to that case. Here are 20 large worldwide companies that must submit a plan and have it approved by a commission of five members within 12 months. Is there any precedent for any such thing in our history?

Mr. KRUGER. Mr. Chairman, I am sure that the court that is hearing the *Equity Funding* case would be quick to point out that the court has other cases on its calendar. But leaving that aside, I assume that the——

Senator HRUSKA. I do not want to leave it aside. The Congress is going to undertake to prescribe upon that commission and upon these companies this particular set of conditions, and they are going to punish them by criminal sentences if they are not complied with. I do not want to leave it aside; you do because I do not think you can say that there is any precedent, can you?

Mr. KRUGER. Well, I was going to say that the court that is hearing the *Equity Funding* case does have before it many other cases, perhaps not of that same size, but it is working on other reorganization proceedings concurrently with *Equity Funding.*

Senator HRUSKA. And have they only 12 months in which to decide them?

Mr. KRUGER. No, that is not true. They have longer than that. I assume two things: I would agree that with you that I think the criminal penalty aspect perhaps should not be present in the legislation, but I assume what really will happen is that after the enactment of this legislation, the Congress will soon be receiving a request from the FTC for additional funds for additional staffing. I think that is a more likely concomitant for the enacting of this legislation.

Senator HRUSKA. That would be wonderful, and having had some experience and observation, as a member of the Appropriations Committee, of how long it takes to build a staff of ordinary size, not one like this, I would say you would not have that staff organized within a year, and thereby, under the law, they are supposed to have approved that plan within a year. That is what the law would be if this bill becomes law.

Mr. KRUGER. I think I suggested earlier in my testimony that I thought that 18 months would be a more appropriate time frame for the FTC to undertake that sort of review.

Senator HRUSKA. As a matter of fact, we had a large increase in authorization for an increase in appropriations in the Antitrust Division and in the FTC. We have virtually doubled the appropriations for those bodies and they said, "We cannot spend that within this next fiscal year. We cannot expand the staff that fast." And they couldn't assemble a staff to spend that much money within 1 year, and here you are asking and blithely saying, "Well, they will have to increase their staff." When, and how soon, because this would put people in jail. It would put them in prison. It would levy fines upon them if they do not comply with this timetable.

Now, let me suggest that the Holding Company Act was enacted in 1935; the Public Utility Holding Company Act was enacted in 1935. It was 11 years later that its constitutionality was determined, and yet they had a timetable that was very much shorter than that, and it took into the sixties to complete that proposition—mind you, 25 years, and a simple operation where corporate entities were of different geographical location in their operation, and they had a completely autonomous government, completely, simple operation. This is not that kind of a situation. Is there any precedent, I ask again, for the type of thing that is being prescribed—the type, the nature, and the timetable of the kind that is being prescribed in S. 2387?

Mr. KRUGER. By itself on this order of magnitude of companies, I would say there is no comparable precedent but, as legal precedent goes, surely that is available.

Senator HRUSKA. Of course, the opening parts of your statement—certainly the first four pages—that is all voluntary agreements, is it not? That is mergers by divestitures, as the case may be, on voluntary agreement. That does not apply here. This is not very voluntary, you know.

Mr. KRUGER. I would think not.

Senator HRUSKA. It is not very voluntary, and a lot of people who are interested are going to say that, "They are impressing me with unjust, unconstitutional, hard, and confiscatory measures," and they are going to resist it.

Mr. KRUGER. And, no doubt, very capably.

Senator HRUSKA. So those first four pages we can sort of disregard, at least in the context of this bill.

Mr. KRUGER. Well, I do not think we can disregard them in the sense that they go, it seems to me, to the question of whether or not we have requisite legal skills and ability to contemplate doing what is being considered here.

Senator HRUSKA. Of course, and we have the same thing in the Senate where the leader gets up and says, "I ask unanimous consent," and we proceed to a limitation of debate of 2 hours, 1 hour on each side, and we will go. Now, when everybody consents, sure. And if everybody consents to one of these plans—I do not know how you are going to get them all in one room and how you are going to get them represented and to speak to the proposition—but if everybody consents, that is a different ball game. Is there any basis at all for thinking that you can get unanimous consent or a consensus among the various parties in interest in this kind of a bill as S. 2387, in any of the 20 companies that are involved?

Mr. KRUGER. I would say, at least not to my knowledge, I do not know if any of the oil companies have suggested that is a good idea, if that is the question. And I would assume they would not.

Senator HRUSKA. But the companies are not the only ones involved; there are bondholders, there are debentureholders there are stockholders, and there are some people who have contracts with those companies and they think that that contract is going to be vitiated and they do not like that, and they are going to resist it. There will not be any unanimous consent.

Mr. KRUGER. But I would suggest that if the legislation were, in fact, enacted, that the oil companies, themselves, would be charged with the responsibility of having to present a divesting plan that is fair and equitable to affected persons.

Senator HRUSKA. They are going to do that.

Mr. KRUGER. I am sure they will.

Senator HRUSKA. They are obliged to do it. I do not know if they are going to do it or not; they are obliged to do it and submit that plan to the FTC, and then the FTC will say yes or no. And if they say no, then they have to go back and try again. Or the FTC will say, "You failed; we will make you a plan ourselves." And they are going to do that with 20 companies of global size within the short period of 12 months. And then, having approved all of them within 12 months, within the following 2 years the whole plan is going to be achieved and, if not, the people go to jail and they get fined heavily.

That is what I am asking for precedent on. That is what I am asking for explanation on.

Mr. KRUGER. I am not sure, Mr. Chairman, that I read the enforcement half as requiring the FTC to find, within 1 year, that the plans submitted are fair and equitable; rather that the plans, themselves, must be presented within that 1-year time frame.

I think that is really what the legislation does seek; I think, as I indicated before, that a 1-year time frame for the presentation by a company of its divestment plan may be too short; I think maybe 18 months is a more realistic time frame, and it seems to me that the companies, themselves, while they may not have unanimous agreement from their various creditors, bondholders, debentureholders and the like, that what they are presenting is fair and equitable, will certainly make efforts to achieve that consent that you seek and, I think, in some measure, will be able to achieve a substantial consent.

Senator HRUSKA. If you seek to base your conclusion and make your projection of what will happen upon unanimous consent of all parties at interest, that is so totally out of the question I do not think an expression of that kind means anything.

After all, you are a businessman. You are a partner in a big law firm. Law firms thrive on differences between parties. And if you say——

Mr. KRUGER. Ordinarily not.

Senator HRUSKA [continuing]. It is an easy thing if all these parties agree to the plan that you propose, then there would be no difficulty. But you never can do that; very seldom can do that, can you?

Mr. KRUGER. Well, I think that we try to do it always. I think that it is a misconception to think that law firms thrive on controversy and differences. I think we thrive essentially on trying to mitigate differences and reconcile different points of view to try to find unanimity, because we all seek to avoid litigation to the extent possible.

Senator HRUSKA. Would it be an easy thing to allocate the outstanding indebtedness of $3 billion of Exxon, for example—I think that is their figure—to the four independent companies that would be formed from it? Would that be an easy matter?

Mr. KRUGER. By no means, but I think it can be done.

Senator HRUSKA. Would there continue in existence a joint and several liability of each of those four corporations for the entire $3 billion indebtedness?

Mr. KRUGER. I assume not. I read a portion of Mr. Bator's testimony, and I think he may well be right that cross-guarantees probably would not be permitted.

Senator HRUSKA. Why do you assume that that would be the fact?

Mr. KRUGER. That cross-guarantees would not be permitted? I am sorry; perhaps I misunderstood your question, Mr. Chairman.

Senator HRUSKA. I asked you whether there would be a continuance of the existence as to the obligation of $3 billion of a joint and several liability on the part of each of the four corporations into which Exxon—or any other company—would be divided. And you said you assumed not.

Mr. KRUGER. I assume not because, as I think I said, Mr. Bator, of the Davis-Polk firm, testified a day or two ago before this committee, and indicated in his testimony that he thought that cross-guarantees

of the kind that you are suggesting, where the liability would remain joint and several with the various separate components after divestiture, would be precluded by the current legislation. I think he may well be right with respect to that and, if he is, then, obviously, you could not have the cross-guarantees. I assume, therefore, you would have to allocate the liabilities among the four separate components in your plan in a manner that is fair and equitable.

Senator HRUSKA. Of course, your answer started out with an assumption and was followed by about three "ifs" and, you know, that is kind of hard. We cannot predicate the language of this bill upon a lot of "ifs" and conjectures and theories and assumptions; we have to put words down that have a definite meaning. And we cannot say "if" there is unanimous consent, this will happen and so on, and that is one of our troubles. I will not ask you to solve that trouble because it is the kind of trouble that in inherent in the legislating business.

Mr. KRUGER. Happy not to be asked. [Laughter.]

Senator HRUSKA. And there is another presumption that is difficult in the light of reason. In your statement you say: One must presume that a plan of divestment which is fair and equitable will result in divested components each able to stand alone and each with sufficient assets and sufficient earnings potential to attract requisite capital. And why must you presume that?

Mr. KRUGER. Because to presume otherwise would mean that those shareholders or lenders who have by law been relegated to an investment in or a loan to a specific component, which does not have those aspects, will not have been fairly and equitably treated.

Senator HRUSKA. Is it likely that plans of divestment would be fair and equitable to everyone and to the satisfaction of everyone?

Mr. KRUGER. Maybe not to their satisfaction, but I assume that they will when approved by courts of law, or the FTC and not by courts of law, be fair and equitable to everyone.

Senator HRUSKA. Have constitutional prohibitions of taking property without fair and just remuneration bothered you at all in connection with this bill?

Mr. KRUGER. I think that certainly that argument will be raised and surely it will go to the courts on that subject, but it does seem to me that if the treatment of affected persons is, in fact, fair and equitable, that the due process requirements and the taking requirements will have been met by the legislation.

Senator HRUSKA. Yes, you are assuming that they will be met?

Mr. KRUGER. I think so, yes.

Senator HRUSKA. Well, that's fine. We will have another assumption to add to the long list.

Mr. KRUGER. Certainly no question about it. As the judges always tell me in the courtroom, they have the only vote.

Senator HRUSKA. Well, thank you very much.

Mr. KRUGER. Thank you, Mr. Chairman.

Senator HRUSKA. And I am glad that you have treated my questions with as much dignity as you have and as much respect. Maybe it is more dignity and more respect than I am entitled to, but you have been very fine as a witness.

Mr. KRUGER. Thank you very much for the opportunity, Mr. Chairman.

Senator HRUSKA. Mr. William Wrench, president of the Potomac Oil Co., is the next witness. I understand that Mr. McGinley is one of your witnesses. You are Mr. Wrench, and the third member of your party is——

Mr. WRENCH. Mr. Singletary.

Senator HRUSKA. In what order will you proceed?

Mr. McGINLEY. I will speak first. I am Mr. McGinley.

Senator HRUSKA. Very well. You are recognized, and you may proceed.

PANEL CONSISTING OF WILLIAM B. WRENCH, ROBERT McGINLEY, AND RICHARD L. SINGLETARY

STATEMENT OF ROBERT P. McGINLEY, PRESIDENT OF SICO CO.

Mr. McGINLEY. Thank you, Mr. Chairman. I am grateful for the opportunity to address the subcommittee. My name is Robert P. McGinley. I reside in Lancaster, Pa., and I am here today in three capacities. In my first capacity, I am president of the SiCo Co., having been in their employ for 30 years. The SiCo Co., is an independent distributor of refined petroleum products, operating since 1886 in Pennsylvania. Presently, we market in 11 counties of southeastern Pennsylvania, all of Delaware, southern New Jersey, and northern Maryland. We employ 285 persons and market approximately 165 million gallons of refined petroleum products per year.

I am also here as the chairman of the Independent Oil Marketers Conference. Accompanying me is Mr. William Wrench of Potomac Oil, Springfield, Va., and Mr. Richard Singletary, Sing Oil Co., Thomasville, Ga., who are also members of the Independent Oil Marketers Conference. Independent Oil Marketers Conference has 69 members from 26 States. The purpose of this organization is to work for greater freedom in the marketplace for oil, which we feel is the best way to assure that the consumer pays the lowest possible price in the long run, and the only way our Nation will resolve its energy problems. Finally, I am here representing the Pennsylvania Petroleum Association, a statewide organization of jobbers.

Although our company is probably large enough to survive vertical divorcement or divestiture, should it be enacted, we are deeply concerned about what might happen to some of our smaller counterparts who have devoted many dollars of their money and many years of effort to building their business. Divorcement and divestiture will, in our view, lead to relatively few marketers dominating regional markets for petroleum. It would, in other words, actually put many small marketers out of business.

There are now about 18,000 distributors and 200,000 dealers marketing refined petroleum products throughout the country. The great majority of these distributors and dealers like our company, are independent businessmen not owned and operated by major oil companies. Because of the efficiencies that we are able to effect, the independents have kept the industry competitive. This, of course, resulted in the lowest possible prices for the consumer.

In our company's 11-county retail marketing area, there are approximately 240 individual resellers of fuel oil. Of these, six are

major oil companies selling direct to end users. In markets in which we supply gasoline to service stations, there are approximately 1,500 stations. Of these, less than 5 percent are operated by major oil companies and approximately 7 percent are operated by large independent marketers. All others, approximately 88 percent, are independent dealers. It is obvious from the above figures cited that the major oil companies are not dominating marketing in our area of the country. Marketing is equally competitive in many other areas of the country. A highly competitive market already exists for refined petroleum products. At the present time, even with Federal regulations in place, surpluses of product has depressed profit margin earnings at the marketing level. The result is lower prices to the consumer.

The petroleum industry is extremely complex. If vertical divorcement or divestiture is enacted, it would require that each segment of the industry would have to produce a satisfactory profit. This, in our opinion, would result in higher prices and greater inconvenience for consumers. In all likelihood, there would be fewer marketers selling larger amounts of refined petroleum product, which would have the effect of lessening competition in the oil industries.

Capital requirements, as a result of government regulations, specifically in the areas of DOT, OSHA, EPA, Coast Guard, and FEA, are already severe. As an example, our company recently expended approximately $1,400,000 at our Wilmington, Del., terminal, to place that terminal in satisfactory operating condition to comply with the laws set forth by Congress. If vertical divorcement-divestiture would take place, another capital requirement of a large amount would be needed by those remaining in marketing in the future. The cost of this additional capital would have to be passed along to the consumer.

The possibility also exists that the major oil company credit cards and brand names would no longer be in place. Credit card costs presently are subsidized by major oil companies. Vertical divorcement-divestiture could cause the cost to carry credit cards to be passed along to the consumers, resulting in higher prices.

There is a possibility that there would be fewer locations selling refined petroleum products, which would cause inconvenience to the public. Our company, like many others, markets No. 2 fuel oil to home-heating customers. There are approximately 16 million homes in this country that heat directly with oil. Most marketing companies offer service contracts to their consumers. In our company's case, we have had to subsidize the cost of service because of competition in the marketplace.

Should vertical divorcement-divestiture be placed into effect, fewer marketing companies would survive, which would lessen competition and increase the cost to those who use oil for heating purposes throughout the country. Let me give you another example of a practice that may no longer exist in the industry, and for our own company, if vertical divorcement were to occur. I refer to exchange agreements which our supplier has established with various other terminal operators, to enable us to effectively lift product at Linden, N.J., Petty's Island, N.J., Wilmington, Del., and Harrisburg, Pa. These arrangements enable us to deliver product to consumers in those areas at the lowest possible cost. Our supplier is able to make these arrangements because he is vertically integrated. If, instead, our own market-

ing system had to be serviced entirely from our own deepwater terminal at Wilmington, Del., we would have a lot higher laid-in cost for our marketing system. Our concern here is that the terminals identified could, under vertical divorcement/divestiture, come under the control of others which could result in our company not being permitted to use these facilities in the future. In our opinion, there are widespread exchanges at this time, which could be disrupted and result in higher cost to the consumer.

Should vertical divorcement/divestiture result in a smaller number of dealers and distributors, a large number of petroleum marketing properties would be placed on the real estate market for nonpetroleum use. Those distributors and dealers who did not survive could find that the values of their assets have diminished because of the large number of properties that could be placed on the market.

In addition to the affiliations that I mentioned earlier, I am a member of the Pennsylvania Petroleum Association, an organization representing 622 gasoline and home-heating oil distributors who both wholesale and retail products in our State. This organization has gone on record opposing vertical divorcement/divestiture of the petroleum industry. The officers and directors of our association requested me to advise you of Pennsylvania Petroleum Association's position. The association's position is based primarily on the facts that I have made in this statement, and feel for the reasons stated, that this proposed action will result in higher prices for petroleum products.

In summary, our statement points out the highly competitive conditions of the petroleum industry. We have to ask what purpose would be served by implementing vertical divorcement or divestiture. In our opinion, the facts point only to additional costs in the marketing segment. These costs would result in higher cost to the ultimate consumer.

At this time, Mr. Singletary and Mr. Wrench will make further statements regarding the proposed divorcement/divestiture legislation and its likely effects in their area of the country.

We will be happy to answer any questions after their statements.

Mr. Wrench. Mr. Singletary will be next.

Senator Hruska. Mr. Singletary, you are recognized.

STATEMENT OF RICHARD L. SINGLETARY, PRESIDENT OF SING OIL CO., THOMASVILLE, GA.

Mr. Singletary. Mr. Chairman, my name is Richard L. Singletary, and I am president of Sing Oil Co., Thomasville, Ga. Sing Oil Co. is a family-owned gasoline jobbership founded by my father in 1935. We supply 55 company-owned gasoline stations, serve 95 other stations and 43 consumer accounts, consisting of government agencies, schools, farms, and small industries. I appreciate this opportunity to share with members of this committee some of my views concerning the divestiture legislation that has been introduced in this Congress.

I am deeply concerned about the effect divorcement of the major oil companies would have on the ability of small gasoline marketers such as our company, to survive. I know of no valid indepth projection having been made that predict the effect this would have on the

marketing sector of the oil industry. Marketing of petroleum products has historically been performed primarily by small businessmen—as dealers, jobbers, both major and private brand. Because of the large amount of capital required in production and refining, major oil companies have encouraged and assisted small businessmen to enter the marketing field. Long-term relationships have been established between these companies and independent retailers, which have greatly contributed to the success of the small businessman.

There seems to be a misconception by some people that there is a lack of competition within this industry. I have found this to be a highly competitive industry during the 19 years that I have been associated with our family jobbership. Even though we have chosen to market primarily as a private brander, underselling major brand competition, we have experienced no reluctance from major oil companies to sell us product. The integrated companies simply do not control sufficient retail outlets to market their refinery output, and have sought companies, such as ours, as customers. We are currently purchasing products from Chevron, Citgo, Tenneco, and Conoco. As far as retail competition is concerned, I cannot remember experiencing a more competitive period than we are now encountering.

As a private brander, we are posting prices 5 to 7 cents a gallon below lawful ceiling prices under current Federal regulations. This condition exists because of the diminishing total market for gasoline. It appears that the major oil companies are gradually relinquishing their position in the retail market to independent jobbers such as our company. Federal law requiring conservation of gasoline will intensify this struggle for survival over the next decade, requiring a substantial adjustment by independent marketers. I am concerned that divorcement will bring about a further shock to the marketing sector. Who will replace the majors in the market? I do not believe that the marketing arms that will be spun off from the major companies—should they be divorced—could continue to operate as they have in the past. My experience as a jobber would indicate that they would probably be forced to adopt mass merchandising techniques. If this occurs, many thousands of dealers and small jobbers would be eliminated. My best judgment is that the resulting structure would be much more concentrated and less competitive than the structure existing today.

Mr. Chairman, I am unable to understand who will benefit from divorcement. I feel very strongly, however, that it will damage the independent jobber such as our company.

Thank you.

Senator HRUSKA. Mr. Wrench, you may now proceed.

STATEMENT OF WILLIAM B. WRENCH, PRESIDENT, POTOMAC OIL CO., SPRINGFIELD, VA.

Mr. WRENCH. Mr. Chairman, I cannot help but make one comment in relation to your first speaker this afternoon and that is that commonsense just does not seem to be very common.

I am an independent petroleum jobber located in Springfield, Va. I primarily market gasoline and diesel fuel in northern Virginia, Washington, D.C., and some in suburban Maryland. Although I mar-

ket the majority of my product through 11 service stations carrying the Phillips 66 brand, my principal supplier, I consider myself and my company completely independent of Phillips or any other oil company. My only financial obligations to my suppliers are for current open invoices for product supplies—10 of these stations are in turn operated by independent dealers.

In order to understand my opposition to and concern about divestiture, I think it would help to know a little bit about my background. I was born on a hill farm in Kentucky, raised by my grandmother and educated by a 3.2-acre tobacco base and the GI bill. Whether it was this background or what, ever since I was about 15 years old, I wanted to be in business for myself. I ended up in Fairfax County after 10 years in industrial development and was able to achieve this ambition by forming my own jobbership, namely, Potomac Oil, Inc. I have since bought out my five minority stockholders, furthering my independence. I am somewhat unique in that most of my jobber colleagues were either from a family previously in the oil business or had worked for an oil company. I started virtually from scratch with a base of 36,000 gallons per month and four service stations in 1960. In 1972 I did an average of 900,000 gallons per month.

I chose the oil business for several reasons, the most important of which is that it afforded people like myself, with limited financial resources, an entry into a good clean business which was needed by society and it offered me the chance to be independent. I like to think that I have prospered and those around me have prospered, because I was willing to get up a little earlier, work a little harder, and give a little better service than my competitors. I have been able to take an almost unknown brand into a well-established market against leaders like Exxon, Texaco, American, Gulf, and many others and have not only survived, but can feel tremendous pride in this operation. If you will check the figures, you will find that the survival rate on scratch jobberships such as mine is extremely low, and the survival rate on scratch jobberships in metropolitan areas such as this is practically nonexistent.

My main point is this: If you are seeking to preserve and aid people like myself by legislation such as S. 2387, please do not do me any favors. I believe that this legislation is one of the biggest threats that has come along to my economic survival. Mr. Chairman, our country is moving into a return to fundamentals; namely, the need to concentrate on finding enough food to feed our population and the world, enough energy to maintain a decent standard of living and enough capital to accomplish these fundamental goals. Spending time on legislation like this is similar to the Berlin Symphony Orchestra continuing to give concerts while the Russians were at that city's gates.

Thank you, sir.

Senator Hruska. It has been charged that the antitrust laws of the Federal Government are not adequate and that there is a monopoly among the big companies and that there ought to be something by way of the law that is before us, the bill that is before us, to sort of bring order into things and improve conditions.

Which of you is it that testified you have never had any difficulty getting supplies of gas from the majors? It was you, was it not?

Mr. Singletary. Yes, sir.

Senator HRUSKA. Now if the companies possess such monopoly power and really could put you out of business, all they would have to do is say they do not want to sell to you. Would that be it?

Mr. SINGLETARY. Yes, sir, that is correct. And I think what this committee should consider is the fact that the new energy bill just passed is going to require the automobile companies to produce cars that will get 27½ miles to the gallon by 1985. There will be a surplus of refining capacity. The oil companies will have to come to people like us to get rid of their product.

Senator HRUSKA. There are more oil jobbers and more independents now in existence than there were 10 years ago, are there not?

Mr. McGINLEY. That is correct, Mr. Chairman.

I would like to respond to your first question, although Mr. Singletary did partially answer it. But, if you will note, the company I represent has been in business since 1889. It has dealt as an independent ever since the year one. It has never had any borrowed money from any major oil company. It has never had any difficulty obtaining refined petroleum products. We have operated under contractual arrangements, usually on 5-year increments. The only trouble that we ever had in obtaining supplies was when the Federal Government entered into the regulatory business, as far as oil supplies were concerned, in 1973, and in January of 1973, from our supplier under contractual arrangements, we had 100 percent of our current needs. Because of the effects of the energy bill, our supplier was required to go back and give supplies to spot buyers who bought in the base period of 1972.

We woke up on February 1, 1973, with an allocation fraction of 66 percent on No. 2 fuel oil, an allocation fraction of 45 percent on gasoline, which was again caused by those who speculated in the market and would not operate under contracts and the Federal Government said, "You have to have supply, gentlemen; it is not fair to take it away from you." So my point is this: That if there is no product out there, how did we survive for 90 years and grow?

Senator HRUSKA. Well, in the bill that is before us, part of the text is that the Congress finds and declares that existing antitrust laws have been inadequate to maintain and restore the effective competition in the petroleum industry. Do you think there is enough competition in your industry, or do you think it has been wiped out?

Mr. SINGLETARY. There is plenty of competition in our industry and there is one thing I would hope this committee would consider. As a private brander, I feel most secure competing with a major oil company that also is a supplier, because his hands are tied. If he is divorced and has to just compete with me in the marketplace, I do not think I have the same protection under the Robertson-Patman Act as if he had to supply me and then compete with me in the marketplace, too. That is one reason that the private brander, such as myself, has been able to do so well, I think, in the retail market.

Senator HRUSKA. You used to have gas wars in your business. Do you still have them these days?

Mr. McGINLEY. They are coming back.

Mr. SINGLETARY. Yes, sir; we sure do. We got them all over Georgia.

Senator HRUSKA. Do they show that there is competition or that there is not? What does a gas war mean?

Mr. SINGLETARY. There is more competition today than I have seen in the 19 years I have been in this business. It is back and it is here to stay.

Mr. WRENCH. Mr. Chairman, you do not have to go to Georgia to get it, you can just cross the river to Virginia and I will supply some for you.

Senator HRUSKA. What is the retail price of regular gas in your respective areas today?

Mr. McGINLEY. When you speak of retail price, are you speaking of pump prices?

Senator HRUSKA. Pump prices, yes. If I drive up and put some regular gasoline in the tank of my car, what would I pay for it?

Mr. McGINLEY. In the general area of 52.9, 53.9 per gallon in my marketing area.

Senator HRUSKA. What about Virginia?

Mr. WRENCH. I think the lowest we have is in the Woodbridge area, 52.9. It goes from there on up. Some of your companies are still at 60.9, but most of them have self-service at 58, 57. I would say right now, they average between 55 and 56.9 for regular gas.

Senator HRUSKA. What about you, Mr. Singletary?

Mr. SINGLETARY. The highest price that we have posted, to my knowledge, anywhere in Georgia, or Florida is 56.9 and the prevailing price is 51.9 to 52.9.

Mr. WRENCH. Our FEA ceiling price, I think, is 62.9.

Senator HRUSKA. Do you get much complaint about the price of your gasoline these days?

Mr. WRENCH. No, sir. People just do not buy it unless the price is down. But to answer you, I think that the marketplace is taking care of itself. I think that most of us back in 1972 had a feeling that gasoline was an inelastic, economic entity. This is not true. If you get the price high enough, people will economize and make other changes. And I think that the economics of the marketplace are diverse enough that this will take care of this and, also, other forms of energy without this legislation.

Senator HRUSKA. I wonder how lucky we are, we are not in some of the European developed countries. We have a report here about the retail petroleum product prices, the U.S. cents per gallon. As of last October in the United States that averaged out to 50 cents for regular gasoline. That is about right, is it not?

Mr. McGINLEY. Yes.

Mr. WRENCH. Yes.

Senator HRUSKA. In Italy it was $1.65; in West Germany it was $1.31; in the United Kingdom, $1.27; in Japan it was $1.38; and in France it was $1.49. Suppose you started pricing gasoline like that? Do you think you would get some complaints from your customers?

Mr. SINGLETARY. Yes, I sure do.

Senator HRUSKA. I have an idea they would complain, too. Does that show something? Does it show that our system is not too bad? Is that an indication, do you think, the way we are set up? Of course, Japan does not produce any oil and they are in a tougher spot, but we are producing. There is not enough incentive to produce further supplies, in my judgment, but nevertheless are we not pretty lucky to

have a system and conditions like we have that we can buy gas for 59 cents a gallon?

Mr. WRENCH. Senator, my greatest concern about the legislation, as I tried to say, is that it is diverting the industry. It is diverting all of us from the main purpose, and that is to find these domestic energy sources. And I do not think that the Senate is aware—and, of course, I live close to Washington, so I am very sensitive to it.—But I do not think the Congress is aware of the instability that considering legislation like this is causing in this industry and the lack of long-term investment decisions that have to be made immediately, if we are not going to be in trouble 5 years from now.

Senator HRUSKA. Well, thank you very much.

Mr. Counsel, have you any questions?

Mr. BANGERT. No questions.

Senator HRUSKA. Dr. Measday?

Dr. MEASDAY. No. questions.

Senator HRUSKA. Thank you for coming.

Mr. MCGINLEY. Thank you, sir.

Senator HRUSKA. Our next panel will have four witnesses, Mr. William Adams, Charles Jackson, Pat Green, and John Johnson. And it is in that order, I understand, that they will testify. Very well, Mr. Adams, you may proceed.

PANEL REPRESENTING SOUTHERN CAUCUS

Southern Caucus is a federation of seven petroleum marketing associations located in the states of North Carolina, South Carolina, Georgia, Florida, Tennessee, Mississippi, and Louisiana; organized for the exchange of views on matters of mutual concern to the members of their respective associations, and to promote a common understanding of the problems which face the petroleum industry.

The constituent State associations number among their collective membership approximately 2,000 petroleum marketers (including jobbers, distributors, and commission agents) who are engaged in the wholesale marketing of petroleum products. Collectively, they handle approximately 60 percent of the gasoline consumed in their States; and approximately 85 percent of the home heating oil. Although all types of marketers are included, the typical member is a major-brand gasoline jobber.

Since its formation in February of 1975, Southern Caucus has been active in promoting its objectives and those of its constituent State associations, primarily in the interest of a return to the free market system in petroleum marketing.

STATEMENT OF J. W. ADAMS III, TREASURER, ADAMS OIL CO., MACON, GA.

Mr. ADAMS. Thank you, Mr. Chairman. My name is Billy Adams, and I am a gasoline jobber from Macon, Ga. I will be the first of four jobbers who will testify this afternoon on behalf of the Southern Caucus.

First, Mr. Chairman, let me say something about the jobber's function in the marketplace. Many people who buy a name-brand gasoline at a service station are under the impression that they are buying from the company's dealer directly. Actually, most gasoline outlets across the country are served by jobbers, and not by major oil companies. Whether we market under a brand name or an unbranded

name, we are the people who most often supply the capital, supply the knowledge of local market conditions and respond to the customer's needs on the level that best meets their demands. For instance, when a new piece of property is sold or zoned for a residential area, it is not the large oil companies who hear about it first in their distant headquarters, and it is not the large oil companies who determine the most promising locations for service stations, nor is it the large oil companies who put up the risk capital, opening stations before the first residents ever begin to move in. This is primarily a function of the jobber, who is on the scene and who is an integral part of the community in which he serves. For this reason, prior to the establishment of the Federal Energy Administration, the major oil companies were constantly competing for supply relationships with aggressive, innovative jobbers.

This system has resulted in: First, competition among jobbers to supply their customers with the best services at the lowest possible price; and second, competition among the major oil companies to acquire the best jobbers to sell their particular products. However, recent Government intervention in the oil industry has caused an erosion of this competition, and, in my judgment, any effort now to break up the supplying companies will result in even less competition, with the greatest punishment being inflicted ultimately upon the American consumer.

My own operation consists of 20 outlets, 14 of which are full-scale service stations and six of which sell only gasoline. My territory is primarily in Macon, Ga., a city of 150,000; with two service stations in Milledgeville, a city of 40,000, one in Gray, Ga., a town of 8,000 and one in Forsyth, Ga., a town of 12,000. I am an independent jobber, which means I may contract with any supplier that I wish to, but I have chosen to contract with a major oil company, marketing under a nationally recognized brand name. This has enabled me to take advantage of my supplying company's national advertising program and their nationally honored credit card system.

On the other hand, some of my jobber competitors in the Macon area have chosen to build their business by marketing an unbranded product, selling for cash at a lower price. Between the two approaches, consumers in the Macon area are given a wide range of choices. My particular brand is Amoco. But this affiliation does not restrain my freedom to deal with other supplying companies. In addition to my Amoco outlets, I own interest in a full-service carwash, which represents an investment of about $60,000. It just so happened that Mobil Oil gave us a better deal on gasoline prices than Amoco, so that particular operation flies the Mobil flag.

The point I am making is this: In my operations—and I have got a pretty typical jobber operation—I have the freedom to sell branded or unbranded gasoline, and, until FEA came into being, I had the freedom to choose from any supplier that I wanted to. Now, on the heels of the massive problems that have been created by FEA, comes this further legislative proposal to divest major oil companies of certain of their functions. Its proponents claim that this will stimulate competition in the marketplace, but I fear it is going to do just the opposite.

Under the present structure, as a jobber, I have some stability in my business. I can be relatively assured of supply for periods up to 5 years on renewable contract. On the basis of that assurance, the banks can risk money on me, and, in return, I can risk money on service station development, enabling me to offer reasonable stability in employment for those who work for me. I know that I can buy, under the present conditions, somewhere in the neighborhood of 15 million gallons of gasoline a year, and I can sell that much, making a reasonable profit for the risks taken and the money invested.

If a divestiture bill passes, I will no longer have the assurance of any of these things. If marketing is divorced from refining, I would have no assurance that my suppliers would have adequate product to supply my operation. If refining were divorced from production, I would have no assurance that refining and distribution would have access to crude petroleum on a stable basis.

Even if I could get sufficient gasoline for my customers, there is no assurance they would be able to pay for that gasoline with credit cards. The relationship with my customers, built over two decades, would face drastic changes. I do not think my customers would understand it. There would also be no assurance that the supplying companies would continue to have the incentive to bid against each other for the privilege of supplying my operation. At the present time, my fellow jobbers and I represent part of the business community in Macon, Milledgeville, Gray, and Forsyth, Ga. We are a part of the local flow of funds. We all have employees; we all have loans with the bank; we all supply services that make life in our area efficient and comfortable for the consumer. In short, we enjoy a stability and an orderliness in the marketing of gasoline in the Macon area.

In the face of our current economic problems, it seems to me that Congress should be particularly hesitant about tampering with a system that has served us so well for so long. The time is just not right to experiment, or to even consider the implementation of any kind of measure that has the potential of breaking up our present stability and orderliness, or that might precipitate a major disruption in the marketplace. And I think that is precisely what divestiture would do. Frankly, Mr. Chairman, I would fear the damaging consequences that would be felt in the Macon area.

It would really appear that the primary purpose behind this proposal is to use the force of Government to punish an industry, and, if that is the case, it will be the American consumer who will be really punished because we are talking about an industry that, until the OPEC nations raised the price of their oil, was more distinguished for its low prices and its gas wars than for anything else. If the conclusion is that the major oil companies are responsible for the energy crisis, then the conclusion must logically follow that the free market system is responsible for the energy crisis. And, I simply do not believe that to be the case, and I have to believe that an overwhelming majority of the American people would share that opinion, preferring instead to let competition in the marketplace solve our energy dilemma.

After all, this is the system that has provided us with the highest standard of living the world has ever know. Using Government to

break up the supplying oil companies of this Nation is not consistent with the principles underlying that system. And, for this reason, in my judgment, the passage of any type of divestiture legislation would only contribute to a lowering of the standard of living of the American people.

Finally, Mr. Chairman, may I respectfully suggest that if Congress really wants to accomplish something constructive to help provide my customers with plenty of product, good service, lower prices, then return capital incentives to the marketplace by removing price controls, removing unnecessary bureaucratic intervention in the oil industry and putting the brakes on inflation. A sound dollar, coupled with freedom in the marketplace, will solve our energy problems and will make our Nation strong and solvent in the generations to come.

Thank you, Mr. Chairman.

Senator HRUSKA. Thank you, sir.

Charles Jackson is our next witness.

You are recognized, Mr. Jackson.

STATEMENT OF CHARLES R. JACKSON, PRESIDENT OF JACKSON OIL CO., INC., CHERAW, S.C.

Mr. JACKSON. Thank you. Mr. Chairman, I am Charles Jackson, and my home is Cheraw, S.C., a small, rural town, located in rural Chesterfield County, which lies in the northeastern part of my State. I earn my living and support my family of five working as president of Jackson Oil Co., a small branded jobbership, founded by my father in 1936. Jackson Oil Co. is an independent branded distributor. We have been in this business nearly 40 years. Our company employs 11 people who have families averaging 3.8 per household.

Mr. Chairman, I appreciate the opportunity to testify here today, to attempt to express our views on S. 2387 and the issue of vertical divestiture of the petroleum industry. In particular, I hope to convey our grave concern about the impact of such legislation on our business, the impact on the business of our customers, and the impact on the consumer in our market. We market principally in Chesterfield County, a rural county of 800 square miles and 34,000 in population. Cheraw is the largest town with a population of 6,000, and the next largest towns are Chesterfield and Pageland, with populations of 2,000 each. There are a number of smaller townships with several hundred people each, and the rest of our people are scattered about the county. You can see that we are very rural.

Our business is principally gasoline, most of which is sold to retail gasoline dealers who, in turn, sell to the retail consumer at the gasoline pump. We also sell gasoline and diesel fuel directly to farmers, heating oils directly to home-heating oil customers and lubricating oils and greases to industrial customers. During the 40 years that we have been in business, we have managed to grow steadily, improving operations and profits, and today we have a small but sound company. We believe we are an asset to our community. Over the years, we have vigorously participated in and supported the civic and political affairs of our town and county, and I hope we have made and will continue to make some lasting contributions to the social and economic development of our area. If so, we must give a large part

of the credit to the economic viability of our business. We choose to operate our business as a major branded distributor. Our supplier is Exxon, from whom we buy under contract, the terms of which are standard buy-sell contract provisions.

You hear charges today that the major oil companies plan to take the jobbers over and put the jobbers out of business or that the major oil companies really control the jobbers. We do not believe that this is true, for the reason that the majors cannot serve the rural markets. It is simply too expensive for them to do so. Also, they know we can do a better job of serving the consumer in our market. We know the people, the customers. The major knows the best way to serve this rural market is through the jobbers. We have not asked our supplier to do our work for us, or to eliminate business risk for us. What we do expect is a supply of a quality product at competitive prices and certain technical assistance and service. Our supplier, on the other hand, expects us to promote and represent its brand and trademark and operate our business in such a way that its brand image is enhanced. I see nothing coercive or sinister about that kind of relationship. We have never expected our supplier or the Government to protect us from failure. Rather, we are willing to take our risk with the discipline of the free marketplace. Rather than our supplier being a detriment to our growth, we feel we have enjoyed a number of advantages as a result of associating ourselves with a major branded product. We have operated with assurance of a supply of quality product at competitive prices.

We have benefited from a national advertising program.

We have had a national retail credit card program to offer our customers.

Our supplier has provided financing for expansion projects and credit terms for our product purchases.

Our supplier has provided us assistance in business counseling and assistance in developing some of our management techniques.

We have a lot of years, and a lot of hard work, and a lot of our investment dollars in associating our supplier's brand name with our sales, our services, and our company image. It is vital to us and vital to most of our customers that this relationship with our supplier continue.

Let me tell you about our customers. Eighty percent of our volume consists of gasoline sold to 36 retail dealers, who, in turn, sell to the retail consumer at the gasoline pump. Ten of these dealers operate full-service gasoline stations, and their business is providing products and service to the motoring public. Six of the 36 dealers are convenience food store operations, who also offer gasoline for sale on a self-service basis. One is a truck stop operator. Nineteen, or more than one-half of our 36 retail dealers customers are rural grocery stores, general merchandise type country stores, who also offer gasoline for sale. You sometimes hear these called "Mom and Pops" because they are usually operated by a man and his wife. You may have heard that these Mom and Pops or rural country stores are passing from the scene. Well, this is not true in our rural market because they continue to serve an important economic need. Each of our retail dealer customers owns and operates his own business as a small, independent,

family enterprise. Many of them own the land and building where they operate. Twelve percent of our sales are direct sales to farmers. About 8 percent of our sales volume is to 500 home-heating oil customers scattered about our county, who expect us to supply their home-heating requirements in an efficient manner and at competitive prices.

Why are we concerned about the impact of S. 2387 on our company' business, the business of our principal customers and the consumer? Mr. Chairman, we believe that such legislation may gravely jeopardize the economic viability of our small company and the livelihood of its employees. We believe that such legislation may do irreparable harm to the business of our principal customers, the small retail dealers who sell to the consumer at the pump.

Further, should such legislation be enacted, we are convinced that the consumer, served by our retail dealer, and the farmers and home-heating oil customers served directly by us, would all bear the burden of higher prices, inefficient and inferior service and a questionable supply of their petroleum requirements.

Regarding the impact on our company's business, the question arises: Given divestiture, who is going to supply us? Supplying distributors, like those of us in rural markets, may be unprofitable and may not fit into the scheme of the new marketing companies. We cannot seem to get an answer to this question. I think the answer is, at the least, that our supply would be in jeopardy. We also believe our brand identification, which we value so highly, may be lost. Further, we believe our cost of goods would increase at least by the amount of cost savings that present vertical integration provides. Product costs to the distributor are bound to increase.

In addition, if some suppliers do withdraw from the rural market, we see the potential for giant chain operators to enter our market and others like it by taking over available retail properties. If this happens, the result will be fewer companies, not more companies, in the marketplace. As these new, larger retail marketing companies look for growth, they could force small distributors, such as my company, out of business. I believe our small branded independent jobbership will lose with divestiture.

Second, regarding the impact of divestiture on our principal customers, the 36 retail dealers mentioned previously, we believe, given divestiture, their independent, family-owned businesses may be in great jeopardy. If Jackson loses his supply, who is to supply Jackson's dealers. If Jackson loses the benefits of brand identification, so do Jackson's retail customers.

Many of these dealers have very small storage, varied credit and buying habits and are widely scattered over our county. The new retail marketing companies, being highly profit oriented, will be interested in the cream of the marketplace. The cream will not be the Mom and Pops and the corner service stations of rural Chesterfield County. Our retail dealer customers will lose with divestiture.

Finally, what of the impact of divestiture on the consumer? During the embargo and the horrendous experience of the gasoline lines, we were reminded of something. The retail consumer in Chesterfield County, or in any rural county, is totally dependent upon the auto-

mobile. We have no alternate transportation. You drive your car, you ride with your neighbor, or you do not go.

I will not go into the details of the hardship of the embargo on those of us in rural areas. We did learn that most of our people who work in our industrial plants drive 20 or more miles per day to work and back home. On a per capita basis, we use a lot of gasoline in Chesterfield County. The impact of divestiture on the consumer will be one of less competition in our marketplace, fewer places to buy gasoline, increased prices for gasoline, and all of this to contend with when one is totally dependent upon the automobile for his livelihood.

Regarding the farmers and home-heating customers we sell to directly, given divestiture, much of the above applies to them. Who is going to deliver to the small farmer who has a 280-gallon tank and wants to pay his bill once a year? Who is going to deliver to the heating oil customer who refuses to buy more than a 100-gallon storage tank and probably cannot afford to? We have many such examples. Would the new marketing companies, with stockholders demanding marketing profits, be sensitive to the needs of these customers? I think not. The consumer will lose with divestiture.

In summary, I feel our jobbership and thousands like it will lose by divestiture, our retail customers will lose with divestiture, and the consumer will surely lose. As a citizen of this great country of ours, as a consumer, a voter, a taxpayer, and a holder of public office, I ask these questions: Who is to gain by this dismemberment of the oil industry? What is to be gained from this most serious proposal of divestiture? What is the economic gain? What is the social gain? And who is to benefit?

I can find no benefit, no gain, and some potentially grave consequences. I do not pretend to be an expert on every phase of the complex oil industry. However, we have operated out family jobbership for 40 years, and I do know my business. I know my marketplace, and I know that my rural market is typical of many across this land, and if my projections about our marketplace are correct, then S. 2387 spells the doom of thousands of small independent businesses, and spells only increased hardship for the consumer.

Mr. Chairman, thank you for this opportunity to present our views of this question.

Senator HRUSKA. Thank you for your statement, Mr. Jackson.

Pat Green is the next witness.

STATEMENT OF PAT GREEN, JR., PETROLEUM JOBBER FROM COLLINS, MISS.

Mr. GREEN. Mr. Chairman, my name is Pat Green. I am an independent petroleum jobber, serving several rural counties in Mississippi and domiciled in Collins, Miss.

I am very much opposed to the idea of divestiture in the petroleum industry of this country. The largest companies in our industry are being attached because of their size and are charged with being noncompetitive and insensitive to consumer welfare. In my remarks today, I will comment mainly on the facts, as I know them, of competition in the marketplace and its ultimate benefit to the consumer

because marketing is my business. However, I would make one observation about the allegation that these companies are too large, and that is simply this: They have to be. The amount of capital required to explore for oil worldwide, then to refine the crude once it is found, involves the commitment of billions of dollars. If the bottom line of a company's financial statement reads in the hundreds of millions, I ask you to measure this large amount of money in terms of return on investment, and you will see that their return is lower than many industries in this country and not excessive.

I function in the marketplace as a petroleum jobber in the following manner. I buy petroleum products from a refiner, Phillips Petroleum Co. primarily. I transport that product from a terminal to a retail outlet that may be owned by me or by an individual dealer. It is then sold as branded and, in some cases, as unbranded gasoline, depending on market needs. My margin, or profit, is derived from my ability to perform this function and sell the product at a price greater than my cost. If there were no competition in our industry, my job would be easy. In fact, if Congress would legislate everyone a place in this industry, the job of transporting and operations would be simple. If there is no competition in our business, then I have wasted some long hard hours and capital funds attempting to woo new customers and, at the same time, keep the ones I have.

Mr. Chairman, the American consumer, my customer, needs no Federal protection. All he needs is the freedom to do business where he chooses, and there are no less than 15,000 independent oil jobbers and 200,000 retail station dealers attempting to convince him that theirs is the station to patronize. A classic example of this free enterprise at work can be seen now. In the last few years, the concept of self service at gasoline outlets has gained in favor with the consumer. Under this mode of operation, an inexpensive building can be installed and savings in labor and investment are passed on as lower pump prices. This innovative method of selling came from independent marketers such as myself. If the larger, integrated companies had the control in this industry that is purported, self service would not exist, for it is mainly the large oil company that has an investment in properties costing $100,000 or more. These high-cost stations are the one suffering large gallonage losses to independent wholesalers and retailers, branded and unbranded.

The point I hope you will bear in mind is that the consumer is making this new marketing concept work. His interests are being met not because of legislative edict, but because there are lots of us out there who want his business, with each trying to outdo the other in terms of price or service to obtain that business. And I can honestly say to you, my concern is not competition from direct major operations, but from fellow independents who have historically been the innovators in marketing.

But what happens to my business if divorcement or divestiture is ordered? Frankly, I am not sure. I do know this: The business of marketing petroleum products could then be dominated by large, national chain operators who could exert more control in the marketplace than the so-called majors do now. In fact, there are several in existence now with the geographic diversity and available financial resources to do just that.

On the other hand, you now have a marketing system for petroleum products that has been developed over many decades; an ever-changing system, yes; but the changes are not being brought about by a few large companies manipulating markets, but, rather, by our customers and our competitors. And the end result is the sale of product at the pump by the most efficient means. The proposition of divorcement is of such magnitude that no one can be sure of its consequences. It would end business arrangements that have been in place for years and replace them with what? Who would supply the product I need for my customers and on what terms and at what price? Where would the capital come from to acquire transportation equipment, storage facilities, and the support services? The business of furnishing this Nation its energy needs is not a simple process. If this legislation is passed by Congress, you will dismantle a system that has evolved over many years and has performed, on the whole, very well. In its place would have to come a bureaucratic maze that would make Congress yearn for simple problems like efficient delivery of the mail and profitable railroad operations.

I do not believe, Mr. Chairman, that the advocates of this bill realize the magnitude of their proposals. I do believe, however, that they know such legislation would take out of the free enterprise category one of our leading industries, an industry that has given the American people bargain basement energy prices when compared to other industrialized nations. If these companies are broken up, the technology, organization, refining capacity and high risk capital for exploration, will never again be in private hands as a highly efficient business organization. And even though the Federal Government may provide the needed capital, it will never match the present efficient use of this capital. And who will pay the difference? The consumers, of course, who are the voters and taxpayers of this country. I would urge you, Mr. Chairman, to proceed very slowly and deliberately in considering legislation of this magnitude. Surely, some other remedy is available if it can be proved that the large companies of this industry are using their strength not in the public interest. Why not use existing laws that are now in place to deal with monopoly and noncompetitive behavior, if it exists?

Finally, Mr. Chairman, it is imperative that you and your colleagues, in your positions of high public trust, use the perspective toward world affairs that is available to you here in Washington to view other countries, Great Britain, for instance, and see where excess government involvement in the economy has led them. Hopefully, it will be your conclusion that our own economy needs less, and not more, Federal involvement.

Thank you.

Senator HRUSKA. Thank you, Mr. Green.

John R. Johnson of Morristown, Tenn., is our next witness.

STATEMENT OF JOHN R. JOHNSON, PRESIDENT OF JOHNSON OIL CO., INC., OF MORRISTOWN, TENN.

Mr. JOHNSON. Thank you, Mr. Chairman, for this opportunity to testify on S. 2387. I am John R. Johnson, president of Johnson Oil Co., Inc., of Morristown, Tenn., a jobber, or a wholesaler, of gasoline,

diesel fuel, kerosene, and related products such as tires, batteries, and accessories.

Although the function of a jobber is a very important part of the petroleum distribution system, jobbers have had a low profile to the point that we were shocked to learn that many people in Government do not realize either our existence or our role. I am an independent businessman, owning our own trucks and real estate and operating my company in five counties of east Tennessee, which are both rural and suburban. We serve towns with less than 25,000 population such as Morristown, Greeneville, Newport, and Jefferson City.

In 1942, my father elected to represent Shell Oil Co. as a jobber. Although I have actively considered propositions from competing suppliers, we have never switched brands. Since its founding, we have worked to make this family company grow while seeking two apparently divergent goals. Our first goal has been to grow in sales while still maintaining a correct, independent relationship with our supplier. For example, in the fifties we borrowed money through our supplier to construct service stations. But in recent years we have looked elsewhere for financing and now owe Shell nothing on such loans. In order to be able to change suppliers on short notice, we sought and received, in the late sixties, a short 1-year supply contract.

Our second goal has been to deliberately and meticulously imitate our supplier in station design, exterior layout, advertising signs and standards of appearance. The purpose of this is to take advantage of Shell's national image to induce people to buy more products from Johnson Oil Co. Many of our tourist customers mistakenly assume that they are purchasing at a station belonging to Shell.

That background brings me to the point of my presentation. From my viewpoint, with many years of experience in this business, I am convinced that breaking up the vertically integrated oil companies would be a disaster of major proportions for this country and particularly for the marketing of gasoline. From firsthand experience, I can state unequivocally that the current diverse system of marketing, which includes vertically integrated companies, produces vigorous competition on the streets and highways of east Tennessee. It existed before the 1973 shortages, and it exists today, with no dealer or jobber of whom I am aware taking full markup allowed by the FEA.

There is no law or complex set of regulations that, in my opinion, is going to increase marketing competition. In Morristown, we compete with other jobbers selling Phillips, Texaco, American, Union 76, and Mobil. Gulf Oil and Exxon have agents. Tenneco and Continental are represented by marketing chains, and at least five smaller regional private brands are sold through salaried outlets. Competition is extremely keen, keeping constant pressure on the small businessmen to offer a variety of marketing concepts.

Our company owns or leases 13 full-service stations, one truck stop, one tourist restaurant, and three convenience markets. All of these are operated by independent, lessee dealers. In addition, we operate ourselves, through an associated company, two combination carwash and self-service gasoline outlets, and we supply gasoline to 39 predominantly rural grocery accounts. We also compete in the sale of heating oil and fuels for commercial accounts.

In our territory, it just is not true that major brand outlets are choking out private brand competition. Indeed, we have seen just the reverse with an accelerating pace in the last 5 years. There has been rapid growth in the number and variety of high volume outlets for private brand companies such as Red Ace, Bay, and Publix Oil.

Vertical integration has given many large companies a strong incentive to move their refined products under their brand name in our market. Particularly, outside the metropolitan areas of Knoxville, Chattanooga, Nashville, and Memphis, these majors have worked in Tennessee through local independent businessmen, such as ourselves, to perform the marketing function for them. It seems obvious to us that divestiture would cause marketing to consolidate into fewer and bigger marketing companies, which would displace thousands of dealers and wholesalers with their own new high volume, salaried chains because of their immense leverage to negotiate long-range contracts for refinery production.

This revolution may work to the advantage of a very few large superjobbers and private brand chains which have the money and resources to create their own brand images, but it can only work to the detriment of the small jobbers who have relied on their suppliers for major brand identification, image standards, credit terms, promotional advertising, product advertising, station design, engineering services, marketing experience, credit card programs, personnel training, and other forms of business support. It would seem obvious that the economies of size would force these new big companies, these "Sears & Roebuck" of gasoline marketing, into existence, and there would probably be no room for the jobber under their umbrella.

If some major oil companies elected to keep their foreign integrated crude production and their refineries, where they would be beyond the reach of this Government, while they concentrated in this country all their efforts and money strictly on marketing, that too would be disastrous. We small marketers would be entirely inadequate to compete with such marketing giants. Why does the Government of the United States even consider legislation at this crucial point in our energy predicament which would give such immense incentive to driving crude production and refining overseas?

I would also predict that after the marketing consolidation does take place and the new giants have formed, prices at the retail level will be far easier to manipulate upward than they are today in a field which is still abundantly filled with individualists who aggressively innovate to meet the public's marketing demands. Indeed, it would seem that the major reason for not breaking up the vertically integrated companies is price. New layers of management would have to be put on every level of the former petroleum chain; and with the same sureness that night follows day that increase in overhead is going to increase the price of gasoline at the pump. It is an idler's dream to believe that the stockholders in the newly dismembered companies would be satisfied with a rate of return on their new investments that is significantly lower than what they now receive.

The trauma of the FEA's immense web of incredibly complex rules is a nightmare that Johnson Oil Co. will not forget. Yet, difficult as it has been, the impact on the petroleum business of those

regulations would be minor compared to the massive confusion, uncertainty, and absolute chaos that would be caused by the implementation of divestiture. Undoubtedly, there would be those giant private-brand chains with the wealth, the inside regulatory knowledge and the national marketing skills to work this confusion to their financial advantage. But for the small wholesaler, I can foresee almost nothing but oblivion.

Why would this country, foolishly becoming more dependent daily on foreign crude oil, suddenly and violently overturn its domestic energy industry like some drunken pushcart peddler who blissfully thinks his overturned fruit will roll helter-skelter down the street to the exact predetermined destination that he has in his mind? This Nation should be doing just the exact opposite. We should be intelligently trying to develop a climate of stability that encourages long-range planning and long-term investments in this country for energy production.

It would seem to me that the individuals with the most to lose from divestiture would be the independent branded jobbers, such as ourselves, and the independent businessman who leases a branded station. Unlike some forms of business, there is little or no incentive for a new superchain to buy out small companies. They need only to construct a new establishment next door to the current station, proclaiming their new image.

What would happen to a Shell jobber if that producer suddenly lost its desire to sell Shell branded products to Morristown? Today I would have some choices because other brands do want to market there. The "tomorrow" envisioned by S. 2387 could very well deny me a competitive choice. The ability of a jobber to associate himself with a vertically integrated company and the ability to change that association to a similar but competing company is the rock bed of his independence and his competitiveness. This bill would destroy that rock bed and replace it with a guaranteed chaos and a promise of something vaguely better sometime and somehow.

I would like to think that the deliberative processes of the U.S. Senate would reveal even to those inclined to the publicly popular position of punishment for "big oil" that this country cannot afford the trauma of dismemberment. Divestiture will create new marketing giants; it could injure marketing competition; it will increase prices. It will curtail investments in the acquisition of energy resources; it will create unparalleled chaos in a fundamental segment of the American economy; and it will be disastrous for thousands of small businessmen.

Mr. Chairman, I respectfully urge this committee to reject the concepts of divestiture. Thank you.

Senator HRUSKA. Thank you very much. Mr. Bangert, have you any questions?

Mr. BANGERT. Just one question, Senator, with your permission. I noted a theme that ran through, I believe, all four of your statements was a concern that I felt concentrated more on divestiture of refining and retailing. I am wondering whether you still would hold the fears for this bill if the divestiture were only in the production stage and the pipeline stage.

Mr. GREEN. I will attempt to answer that, Mr. Bangert. We feel that there are economies from top to bottom, from crude production through marketing, that are available to an integrated company that would not be available were they not integrated. That would apply, in our minds I believe, from crude production right on through.

Mr. BANGERT. So that those economies, you feel, would be destroyed with any kind of divestiture?

Mr. GREEN. Right. Let me give you a simplistic analogy, maybe. Go to your local Sears and Roebuck store and tell them that they have to have each of their departments in a separate building; separate management operation, and so forth. You can see what it would do to their concept of marketing. You can see how it would add to their expense of marketing. That is an example of what this bill is telling the large oil companies to do.

Mr. BANGERT. Thank you very much. Thank you, Senator.

Senator HRUSKA. Mr. Sneeden of Senator Thurmond's office has a few brief questions.

Mr. SNEEDEN. Mr. Adams, you, as an oil jobber, I understand from your testimony, are in a completely independent business; is that right?

Mr. GREEN. Yes, sir.

Mr. SNEEDEN. I believe you mentioned you, in fact, do contract with two different major oil companies?

Mr. GREEN. That is correct.

Mr. SNEEDEN. As I understand your testimony, the main thing you are concerned with in this divestiture legislation is the uncertainty that lies ahead for you as an independent businessman; am I correct?

Mr. GREEN. That is right, yes, sir.

Mr. SNEEDEN. And, also, a theme ran through your testimony, a fear for the community and the customer.

Mr. GREEN. That is absolutely correct.

Mr. SNEEDEN. Would you like to elaborate a little on those two points? What do you see?

Mr. ADAMS. Well, I think the principal problem posed before us is to provide adequate supply. And rather than providing or doing something constructive towards providing supply, it appears to me that divestiture is going to do exactly the opposite. Not only are we facing the proposition of having less product because we are doing nothing to encourage supply, but on the other hand, as Mr. Green pointed out, we are possibly breaking up capital expenditures even worse, but I think we are looking at the possibility of higher costs at the pump to the consumer; no question about it. Because, as I understand divestiture, you are going to be eliminating competition in the marketplace. Competition is what provides supply and low prices.

Mr. SNEEDEN. Mr. Jackson, you mentioned you are a public servant. What office do you hold?

Mr. JACKSON. Mr. Sneeden, I am the mayor of the town of Cheraw. And if you would allow me just a minute, I would like to say that in that capacity I have an opportunity to talk with a lot of people, and I sense a feeling of our people that any radical change or any radical divestiture or dismemberment of the oil industry is something that they have serious reservations about. Their primary concern in our

area seems to be one of supply: Am I going to be assured of getting enough product to get me and my family about this county and about this part of the State, and more particular, to work and back, and am I going to be able to do that at some reasonable cost?

I think, while there has been a lot of public opinion and poll taking, and what not, about how the public feels about the oil companies, I kind of catch that on both sides of it. If you forgive me a minute, I saw a poll the other day that said that public servants and people in the oil business rank 19th and 20th out of a 20 schedule. I do not know whether I was—I was 19th and 20th, I guess. At any rate, what I am trying to say is that I sense the feel of people in our area. They are very reluctant to see legislation of this scope. They want better answers than we seem to have right now before they would be inclined to support this kind of legislation.

Mr. Sneeden. One further question, Mr. Jackson. The proponents of divestiture legislation say one of the main advantages is to increase competition. From the thrust of your testimony, I detect that you disagree with that. Would you like to comment further on that point?

Mr. Jackson. Well, yes. In the first place, I do not buy the proposition that the market is not competitive now. Now, we have heard a lot of testimony here today regarding the competition in the market, and there has been a lot before this committee.

Regarding my own rural market—and you get the picture: we are in the boondocks. We are talking about 35,000 people in nearly 1,000 square miles, and it is in the country, I will tell you. But we have seven major oil companies that are represented in that market and we have eight or nine—and I am not positive of that—private brand companies in that market. And there are lots of places for these people to buy gasoline, many of them right close to home from these rural country stores that I have talked about and from service stations that are still in business in our area, and there are a lot of them. We have got a lot of competition. Mr. Chairman, our prices, for example, yesterday when I left Chesterfield County, ranged from 49.9 to about 53.9. So our prices seem to be maybe even lower than some of the other markets we have heard here today. We have got competition that will blister you down in our part of the country.

It seems to me that if I understand what is going to happen—what may happen—it seems to me that the new marketing companies are going to have to produce rates of return that are going to satisfy their stockholders. I envision that as being a different sort of a marketing scheme than we see now and I think it is going to require different economics. And I do not see how in this world those marketing companies are going to serve all these little accounts that the present system is serving. I do not think economics will allow them to do it. Consequently, I think you will see a greater concentration, first in your metropolitan areas and then in your rural areas, of marketing companies.

I think the less efficient companies will go under, and maybe that is as it should be. But competition will, in fact, become less in the marketplace, and not more, as a result of this bill, I believe. It is my view, Mr. Sneeden, that in our markets, which I do know something about, that the new marketing companies—the result of that would be fewer places to buy gasoline, less competition and, I believe, higher prices.

Mr. SNEEDEN. Mr. Green, do you feel that divestiture of the oil industry will eventually lead—do I detect from your testimony a fear of overregulation, further need for regulation by the Government, of the energy field?

Mr. GREEN. There is no doubt in my mind, Mr. Sneeden, that to administer this proposed divestiture legislation would require a large organization. It would require man-hours, a great deal of time and a lot of people to put this legislation into effect. Frankly, what we need in our industry is less regulation, and not more. We have a competitive industry. There is evidence of that very readily available for anybody who is familiar with the oil industry. Yes, sir, it would require a large government organization to put this bill into play.

Mr. SNEEDEN. Do you feel you would be more constrained as a businessman? Is this what you fear, primarily?

Mr. GREEN. Yes, sir, and we have recent experience, or reason, to have these fears. We have dealt with FEA now for a while and I will tell you for sure, I will be happier with my future in the hands of a major oil supplier than I am with someone up here, very frankly. We have a fellow in Mississippi that they say can mess up a one-car funeral. I think that we do not have a monopoly on those types of individuals.

Mr. SNEEDEN. Thank you, Mr. Chairman.

Senator HRUSKA. Thank you, Mr. Sneeden. You have brought out some very fine points.

Gentlemen, we appreciate your having come to testify for us.

Mr. GREEN. Thank you.

Senator HRUSKA. Our next witness is William A. Johnson. He is accompanied by Mr. Messick.

Mr. Johnson, I understand you have a summary of your statement. We will put the entire statement in the record, and you summarize it as you wish. All of it will be printed at the conclusion of your oral remarks.

Professor JOHNSON. Thank you, Mr. Chairman.

STATEMENT OF PROFS. WILLIAM A. JOHNSON, DIRECTOR, AND RICHARD E. MESSICK, ASSOCIATE, GEORGE WASHINGTON UNIVERSITY'S ENERGY POLICY RESEARCH PROJECT

Professor JOHNSON. Mr. Chairman and members of the committee, we have prepared a statement, as you have indicated, and this has been submitted to the committee. The summary that I am going to give will take only about 3 or 4 minutes.

My name is William A. Johnson. I am the director of George Washington University's energy policy research project, and was formerly Assistant Administrator for Policy Analysis and Evaluation at the Federal Energy Office. With me is Richard E. Messick, who is one of my associates at the project.

Our testimony today is based on a larger study, entitled, "Competition in the Oil Industry," which was recently prepared by members of our project. I have provided copies of this study to the committee, and I understand that it, too, will be made part of the committee record.[1]

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[1] See p. 2334.

Legislation requiring divestiture of the operations of the vertically integrated petroleum companies rests on three basic premises. The first is that the oil industry is not workably competitive, as that term is defined by antitrust lawyers and economists. The second premise is that the only way to remedy the alleged lack of competition in the oil industry is through reorganization by vertical divestiture. The final premise of this legislation is that the Federal Trade Commission and the courts are incapable of dealing with the antitrust problems of the oil industry and that, therefore, a legislative shortcut is necessary. In our view, all three premises are wrong. Let us look at each of these premises in turn.

First, we reject the contention that the oil industry is not workably competitive. In our study, the larger study which I mentioned, we examined several charges concerning the behavior of firms in the industry, the economic performance of the industry, and its market structure. In examining each of these areas, we found that these charges were usually exaggerated or erroneous. One interesting finding of our study, incidentally, is that many of the alleged anticompetitive practices of the oil industry can actually be traced to the effects of government regulations and other policies, and not to deliberate anticompetitive behavior by any members of the industry.

What concerns us most about the divestiture legislation is its ramifications for U.S. foreign policy. The United States will continue to remain dependent on foreign oil for at least the next decade, Project Independence notwithstanding.

During the last Arab oil embargo, the vertically integrated, international companies were able to shield the United States from the full effects of the embargo. One reason for this is that most international oil companies had substantial downstream investments in the United States. In the event that divestiture is ordered such that the international companies must abandon these downstream investments, and then another embargo occurs, it is doubtful whether these companies would have as great an incentive, or even the ability, to shield the United States from future shortages. Divestiture legislation would also prolong United States dependence on foreign sources of oil. Companies with significant overseas holdings may choose to abandon some of their operations in the United States under a divestiture order.

For example, let us suppose that the Federal Government orders the divestiture of refining and marketing from production in the United States. One way for the international oil companies to remain integrated under divestiture would be for them to retain their refining and marketing operations in the United States while shifting production abroad. Not only might this help undermine U.S. efforts to achieve reasonable self-sufficiency in energy, it could also pose far greater competitive problems for independent refiners, jobbers, and marketers than now exist. Thus, at the very time when the national interest requires greater investment in domestic production, the Government would be encouraging just the opposite.

In our judgment, divestiture would also make the domestic oil industry less, rather than more, competitive. Each of the divested segments of the oil industry would have to become independent profit centers. The efficiency lost through vertical divestiture may be made

up by greater concentration at each level of the industry. Small businessmen, especially at the marketing level, would be absorbed into larger companies. Alternatively, the American consumer might pay higher prices for oil products to allow each segment of the industry to become independently profitable, as well as to cover additional costs of storage, working stocks, and other expenses associated with the loss of efficiency resulting from divestiture. Either way, our Nation loses.

Finally, we feel certain that divestiture legislation would be challenged in the courts; given the complexities of the issues, judicial resolution could take years. In the meantime, few investors are likely to show much interest in the oil industry. Once again, this would occur precisely at the time when the national interest dictates encouraging investment in domestic industry to insulate our economy and foreign policy as much as possible from the actions of the producing countries.

This completes the oral portion of our testimony, and we will be happy to answer any questions that the committee may have.

Senator HRUSKA. Very well. And the documents to which you have referred will be made a part of the record, too.

[The combined prepared statement of William A. Johnson and Richard E. Messick follow. Testimony resumes on p. 2099.]

PREPARED STATEMENT OF WILLIAM A. JOHNSON, DIRECTOR, AND RICHARD E. MESSICK, ASSOCIATE, GEORGE WASHINGTON UNIVERSITY'S ENERGY POLICY RESEARCH PROJECT

Mr. Chairman and members of the committee, we appreciate this opportunity to appear here today to discuss various proposals that would require the divestiture of some or all of the assets of vertically integrated petroleum companies.

My name is William A. Johnson. I am the director of the George Washington University's Energy Policy Research Project and was formerly Assistant Administrator for Policy Analysis and Evaluation at the Federal Energy Office. With me is Richard E. Messick, one of my associates at the Project. Our testimony is based on *Competition in the Oil Industry*, a recent study written by the members of our Project. Because copies of the complete study have been made available to the Committee, we shall confine ourselves to a summary of those portions relevant to a discussion of vertical divestiture of the oil industry.

Legislation requiring divestiture of the operations of the vertically integrated petroleum companies rests on three basic premises. The first is that the oil industry is not workably competitive, as that term is defined by antitrust lawyers and economists. The second premise is that the only way to remedy the alleged lack of competition in the oil industry is through reorganization by vertical divestiture. The final premise of this legislation is that the Federal Trade Commission and the courts are incapable of dealing with antitrust problems in the oil industry and, therefore a legislative "shortcut" is necessary. All these premises are wrong.

Let us look at each of these premises in turn.

First, the behavior of the firms in the industry. Much of the hostility towards the oil industry, and the major oil companies in particular, is based on the behavior of the industry during the last three or four years. Among the charges against the industry are (1) the major oil companies have colluded to drive independent oil marketers out of business; (2) the international companies have used the Arab oil embargo to profiteer at the expense of the American consumer; and (3) through various practices such as exchange and processing agreements and joint ventures, the oil industry is able to set prices and control output irrespective of competitive forces.

Much of our study is devoted to considering these charges in detail. On the whole, we have found little substance to these and like charges. Indeed, what we have found is that many of the alleged anticompetitive practices of the

oil industry can be traced to unwise and shortsighted government policies, particularly the government's price, allocation and entitlements regulations.

Let me stress that our study does not suggest that there have never been any antitrust violations by firms in the oil industry, nor that violations will never occur in the future. What it does suggest is that these violations have not been as widespread as critics charge. Furthermore, we believe that the violations that have occurred or may occur can be effectively remedied through existing antitrust law.

In considering the economic performance of the petroleum industry, we focus on one indicator which has received an inordinate amount of attention by the media, the general public and policymakers in the past two years: the level of profitability. Despite often repeated charges of excessive or unconscionable profits, our study shows that, over time, the industry has not been abnormally profitable. It is true that, as a result of several once and for all occurrences, such as the devaluation of the dollar and the rise in inventory valuations because of OPEC price increases, profits rose sharply in late 1973 and early 1974. However, since that time, profits have fallen to pre-embargo levels.

Whether or not an industry is workably competitive also depends on its market structure. Two widely used indicators of market structure are concentration ratios and barriers to entry for new firms.

A concentration ratio is the percentage of assets, value added, output, or sales accounted for by a specified number of the largest companies in an industry. Using data published by the Census Bureau and others, we have compared the four and eight firm concentration ratios for important sectors of the oil industry with those of other major industrial sectors in the United States. We have concluded that the oil industry is one of the least concentrated industries in the United States.

We limit our analysis of barriers to entry to the refining sector of the oil industry, that sector in which, critics charge, barriers to entry have been most pervasive. We did find several obstacles that have impeded entry by potential refiners. However, these barriers were, once again not the result of collusive behavior by existing refiners, but of government regulatory and environmental policies. Yet, even with these hurdles there has still been significant entry by new firms into refining in recent years.

Despite such findings, proponents of vertical divestiture legislation still contend that the industry is noncompetitive. Their arguments focus on the nature of vertical integration itself. Indeed, many of these critics seem to believe that vertical integration—at least in the oil industry—should be declared a *per se* violation of the Sherman Act.

Vertical integration has been under attack for at least fifty years. Contemporary critics of vertical integration emphasize two major arguments. First, they claim that integrated petroleum companies have used profits from the production level to subsidize refining and marketing operations and, in this way, have discouraged entry by nonintegrated refiners and marketers. Second, they contend that vertical integration allows companies owning relatively concentrated segments of the industry, especially pipelines, to the extend the market power derived from this ownership to other levels of the industry.

In our study, we argue that if, in fact, the vertically integrated oil companies have subsidized their refining and marketing operations from crude oil profits, they have been acting against their own economic self-interest. Furthermore, few independent oilmen have complained about discriminatory treatment by major oil company-owned pipelines. And those that have been discriminated against are able to take their complaints to the Interstate Commerce Commission.

The profit-subsidization argument applies to non-oil as well as oil industry activities. Consider, for example, two refiners equal in every respect except that one owns a rather profitable chain of drugstores while the other does not. There is nothing to prevent the refiner owning the drugstore chain from using his profits to subsidize his refining operations. To be fully effective in correcting such "abuses," vertical divestiture legislation should be amended to prohibit refiners from also owning drugstores. But then we should have to include grocery stores, dry cleaning establhsiments and all other types of businesses.

The fallacy underlying the profit subsidization argument should be clear. Why should an oil company want to continue to lose money on unprofitable downstream activities over a long period of time? The rational businessman

would simply disinvest in or sell off his unprofitable activities and live off the profits of his successful activities. Most integrated oil refiners have, for this reason, relied increasingly on independent oil jobbers and marketers for the sale of their product. Only a few have considered investing in direct marketing operations and these ventures, as a rule, have not proved particularly profitable for the integrated oil companies.

In short, we reject the first premise of divestiture legislation—that the industry is not workably competitive. Let us now shift to the second premise—that vertical divestiture is the only effective means of restoring competition to the industry.

There are, of course, many remedies available for restoring competition to an industry judged noncompetitive. An injunction may be issued; patents, trademarks and other trade secrets may be made available to competitors at cost; the terms of purchase and sales contracts may be altered. These remedies are often effected through consent decrees. However, our point is not to catalogue all the possible remedies that the government and private parties have available in an antitrust proceeding. Instead, it is merely to point out that vertical divestiture is only one of many policy options.

Since we reject the contention that the industry is noncompetitive we will not discuss here the merits of these other remedies. Rather, we discuss some of the consequences of legislating vertical disintegration of the oil industry.

Let us suppose that integrated oil companies are ordered to divest themselves of their operations in more than one sector of the industry. What might be the results of such an order? First, divestiture would probably increase U.S. dependence on foreign oil and therefore U.S. vulnerability to another oil embargo. The U.S. is now and will likely continue to be for at least the next decade partially dependent on foreign oil. Neither the North Slope, the outer continental shelf, nor Project Independence is going to make the U.S. self-sufficient in petroleum, particularly in the face of a sustained economic recovery. Under these circumstances, the relevant question is: Do we or do we not prefer the large international majors to continue their close working relationship with the United States? A report issued by Senator Church's Subcommittee on Multinational Corporations concludes that during the 1973 embargo the international oil companies followed a policy of equal suffering. (Multinational Oil Corporations and U.S. Foreign Policy, p. 147.) In effect, they required nations deemed "friendly" by the Arabs, such as France, Spain and the United Kingdom, to share some of the shortages intended primarily for the United States. A major reason for this (although not the only reason) was the substantial downstream investment by the international oil companies in the United States. Vertical integration gave the majors an incentive to supply the United States with more crude oil than the Arab nations would have allowed had their embargo been fully effective.

One should consider whether the multinational companies would continue in their protective role toward U.S. downstream activities if forced to choose between production or downstream operations. Indeed, if faced with divestiture of their foreign and domestic operations, what might the majors give up? Those with significant foreign operations may give up their domestic operations altogether. Nor would exclusion of foreign holdings from a divestiture ruling help. Oil companies could retain the benefits of vertical integration by investing heavily in production and refining abroad and selling their imported refined product through marketing outlets in the United States. The major international oil companies could, in this way, remain integrated. They would also provide a far greater threat to the independent marketing segment in the United States than they do now.

In short, with divestiture a common interest between the majors foreign producing countries might be forged in which the companies decide that their future interest and perhaps even their future survival depend upon cooperation with producers outside the United States. In our opinion, this international ramification of divestiture and especially the fact that divestiture would increase U.S. dependence on foreign sources of oil is the most severe consequence of the proposed legislation and should be uppermost in the deliberations of the Congress.

In addition, in our judgment the domestic oil industry is likely to become less competitive, not more competitive, because of divestiture. At all four levels, but especially in marketing, the industry would have to become more concentrated if each of its segments is to become independently profitable.

Over the past decade, independent marketers have gained a growing share of the market at the expense of major branded outlets. One reason for this has been an almost chronic excess refining capacity which has, in turn, created a spot market for gasoline and other refined products. With the exception of 1973–74, excess capacity has been the prevailing state in the industry. Under divestiture the refining industry would have to become more profitable than it has been in the past. As a result, this excess capacity would probably disappear and, with it, the spot market which has nurtured many independent nonbranded marketers.

Gasoline marketing is a particularly vulnerable segment of the industry. After divestiture, it would also have to become profitable in and of itself. In recent years, the economics of marketing has moved the industry toward higher volume sales through fewer outlets. Divestiture would give further impetus to even greater concentration in marketing. It would probably be the catalyst that speeds the creation of a relatively few high volume outlets and the demise of many small jobbers and dealers.

Existing high volume independent jobbers would be in a good position to buy up major oil company marketing operations. Some of the divestiture bills we have seen would actually permit these jobbers to enlarge and integrate backward into refining. With this bonus, the marketing segment of the industry would probably become dominated by giant semi-integrated companies. Once the major company umbrella is removed from the smaller branded and nonbranded independent marketers who are served by the majors, these marketers may find themselves either absorbed into new marketing conglomerates or reduced to a position in which they cannot compete effectively.

Major brand jobbers and major oil company lessees are especially likely to be hardest hit by divestiture. They would lose the benefits of credit cards, advertising and other services provided by major oil company suppliers. Most important, they would lose an assured source of supply. Supplier relationships built up over many years and protected by contract at some cost to branded marketers would be destroyed.

Underlying the argument throughout this section is a prospect ignored by critics of vertical integration of the oil industry: Without the major integrated companies there would have to be rather significant horizontal mergers and greater concentration in all four segments of the industry. Barring this, there would have to be substantial price increases to allow the less efficient members of each segment to survive.

Some critics of divestiture also argue that it would disrupt capital markets and almost certainly depress the prices of oil company securities, in this way reducing the assets of millions of industry shareholders. On the other hand, supporters argue that the larger integrated oil companies would not have to sell off shares if ordered to divest. Rather, the companies could simply divide themselves vertically or horizontally in order to fall within the restriction set by law. Under some divestiture bills, a shareholder in Exxon could either become a shareholder in four separate firms producing, transporting, refining, and selling panoil, or a shareholder in a pipeline company and several small integrated companies, each falling within the size limits set by the law. It probably would not be that simple, but whether the impact of divestiture on shareholders would be as serious as some allege is anyone's guess.

In short, not only are there other remedies for the alleged anti-competitive effects of vertical integration, divestiture may be no remedy at all. It is quite likely, in our opinion, that the principal victims of divestiture may well be certain independent segments of the oil industry, the very groups divestiture is supposed to help.

The final premise on which the argument for vertical divestiture legislation rests is that the courts and the Federal Trade Commission are unable, for one reason or another, to deal with antitrust problems in the oil industry. This committee should investigate this premise further. Are there procedural barriers to effective antitrust enforcement that need to be reformed? Is the oil industry the only American industry for which present antitrust laws are inadequate? If there are other industries, which ones are they and what do they have in common that makes them unreachable under existing statutes?

If this committee decides that there exists a general category of industries for which present law or procedure is inadequate, it would seem more appropriate, as well as more effective, to amend the antitrust laws, rather than to deal with each industry by special legislation. Such an approach would have the

added advantage of shielding the legislation from the charge that it is a bill of attainder and therefore unconstitutional. For, should vertical divestiture legislation be enacted into law, we suspect that hose companies affected by it will surely challenge it on this as well as other grounds.

Whether a vertical divestiture bill would be held to be a bill of attainder is anyone's guess. The Supreme Court's latest opinion on the subject [United States V. Brown, 381 U.S. 437 (1965)] leaves the matter in some doubt. However, one possible result of such a challenge may be a trial on the merits of the antitrust complaint. Justice White, in his dissent in *Brown*, argues that the key distinction in bill of attainder cases is between regulation and punishment. Congress has undoubted power to regulate the oil industry in the public interest; it has no power to punish it for past wrongs. To decide whether vertical divestiture legislation is a regulatory or punitive measure may mean that the court will have to hear evidence on whether the industry is competitive or not. This. in turn. could lead to the prolonged trial on the merits of the divestiture bill that supporters of vertical divestiture legislation are trying to circumvent.

This litigation would take years. What would happen in the meantime? Few companies would be inclined to invest in the oil industry, particularly in those segments of the industry which they would sell off under a divestiture law. At this most critical period, when expansion of industry capacity is needed to insulate our economy and foreign policy as much as possible from the actions of producing countries, the U.S. would, instead, encourage investment in the oil industry abroad and in non-energy activities in the United States. While Congress focuses on meting out punishment to the vertically integrated companies, OPEC and the Arab producing nations can only chuckle.

Senator HRUSKA. I think Dr. Measday has some questions.

Dr. MEASDAY. I just have one or two, Senator.

Professor Johnson, in your prepared statement, you argue that it is completely illogical to assume that the integrated companies have in any way subsidized refining and marketing operations from crude oil profits. Further on, and in greater detail, I think, in your study, you say that with divestiture, prices would go up, because refining and marketing would now have to earn adequate rates of return on their own merit. Now, isn't there a little bit of a contradiction there?

Professor JOHNSON. No; not really, because what we are saying is that in the long run and over a long period of time, we cannot expect that production will subsidize refining and marketing. Such subsidization, however, takes place over a short period of time and has, in fact, been one of the practices by the integrated oil companies. Oftentimes, an integrated company will extend credit terms to new jobbers, particularly in new regions of the country in which it thinks it has an opportunity to have its product marketed.

So that you do find short-term subsidization downstream. What is more, in the later quotation that you mentioned, we were talking about increased costs due to other factors, as well. What you are going to find, for example, is duplication of management in each of the divested segments of the industry. You are going to have profits at the refining level that will be based in part on profits at the production level; profits at the jobber-wholesaler level based in part on now separate profits at both the refining and the production levels, and so on. You are going to have profits on profits.

There will, as we indicated, be increased costs of storage and working stocks that would be necessary for each of the divested segments of the industry to operate with some degree of certainty that they could continue to supply their customers uninterruptedly.

All these things are going to require higher costs, and if these costs are not going to eat into the profits of the divested entities of the industry, the prices to consumers are going to have to go up.

Dr. MEASDAY. On the question of longrun subsidization, it seems to me that, as I recall, Mr. Tavoulareas of Mobil told us a few days ago that as long as he could remember at Mobil, the refining and marketing operations had provided very low rates of return. He indicated to us that Mobil made its money on crude.

Professor JOHNSON. This is generally the accepted view of what has happened in the industry. However, there are different companies, and these companies have differing experiences.

Refining has historically been characterized by excess capacity; it is the nature of the business. There is an enormous investment that goes into the construction of refineries and it pays companies to operate refineries at as near full capacity as possible. The result has been a tendency to sell at the margin at distressed prices. This is how some of the large marketing chains mentioned by several of the earlier witnesses got going. They were able to buy their product at distress prices and became very big operators as a result of that. The only time in recent years that refining capacity tightened up in the United States was in 1973–74. We are back now to a situation of excess refining capacity.

So, you are quite right. In refining—although I do not have the data to demonstrate this—profits have not been very substantial for most of the major oil companies in recent years.

As far as marketing is concerned, again you are quite right. As a rule the major oil companies are not good marketers. That is why you have had several groups here, representing either major branded jobbers or private branded jobbers, testifying to the effect that they have been able to survive over the years. They have been able to survive because marketing is essentially a local industry, requiring detailed knowledge of local customers, local needs, and a first-name basis relationship between marketers and their customers. The major oil companies simply can't do that. Marketing is without question, I think, better and more efficiently performed by the independent jobbers; most major oil companies have recognized this, and for this reason, they have chosen to sell primarily through independent jobbers. If you got rid of FEA regulations that have frozen base-period customer relationships, I think you'd probably see most major oil companies actually moving further in the direction of marketing through independent jobbers. Marketing has not been as profitable for the major oil companies as it has been for the independents. This is an educated guess. And again, I do not have the detailed data to back that up.

Dr. MEASDAY. The only other question I have is that you also indicate there has been substantial new entry into the industry, and certainly, we can agree that there has been some entry. But what you offer here in the full study, the table in your prepared statement, in which you give 30 substantial new entrants since 1950, that seven of them have come in by acquisition, and six have entered on a grassroots basis, how many of the six grassroots entrants have been in continental United States?

Professor JOHNSON. I am going to turn that question over to Mr. Messick who happened to write that section of the paper.

Mr. MESSICK. Your question was how many of the six grassroots refineries have been in the continental United States?

Dr. MEASDAY. Right.

Mr. MESSICK. All of them except Amerada Hess, and Amerada Hess, of course, built its refinery in the Virgin Islands, and through a kink in the import quotas was essentially for——

Dr. MEASDAY. Well, how about commonwealth, in Puerto Rico?

Mr. MESSICK. Oh, I am sorry. Well, I think that, perhaps, a more meaningful way to look at entry would not be entry into the continental United States per se, but entry into the marketing area.

Dr. MEASDAY. Into the U.S. market?

Mr. MESSICK. Yes.

Dr. MEASDAY. Well, let us take the three, though, that are located in the continental United States. ECOL is under construction, and we certainly hope that Mr. Canab will find it is a viable operation, because it would be an amazing thing. Union Pacific, on the other hand, I think, got in by acquiring Champlet, with about 91,000 barrels a day, didn't it?

Mr. MESSICK. I am not certain of that.

Dr. MEASDAY. Yes; I believe it did. Fred Koch, I believe, was actually in refining with Wood River in early 1950, which is, you know, a dirty trick. But I think his first move into refining was the acquisition of Great Northern, which is still the location of the major Koch operation. So I am not sure that this is a grassroots refinery operation either. I think there have been entrants, but I think most of the entrants have come in by acquiring existing refineries, which may be a good thing.

Mr. MESSICK. It is the toehold theory of entry, I think, that is being referred to.

Dr. MESADAY. Yes; but I am not sure that your data indicate, really, substantial entry into the industry on a grassroots basis, which is one of the things that the subcommittee staff, majority staff, has been getting into.

Mr. MESSICK. I think we can get into a word game as to what "substantial" is or what it isn't, and I think what we tried to do in our paper was point out that yes, indeed, there had been barriers to entry in refining, and if we looked at who erected those barriers, it turned out to be the U.S. Government, rather than as a result of collusion from industry sources.

Professor JOHNSON. Or State and local government, in some cases. May I add a note on that? I think, in looking at this issue, you are really looking at the wrong issue. The most efficient way to expand refining capacity, almost inevitably, is to expand an existing refinery. Refineries are very expensive units to have to construct on a grassroots basis. If a company buys a refinery that has, let's say, 20,000 barrels per day of capacity and takes that capacity to 160,000-plus barrels per day, as did Coastal States, this is a significant addition to refining capacity. And it has probably been done the most efficient way possible. So to use as a measure of entry building grassroots refineries is wrong. If companies feel obliged to build grassroots refineries when they can just as well expand an existing refinery, I think there is a good chance that they are not serving the consuming public as well as they might otherwise be doing.

Dr. MEASDAY. I would agree, certainly, that Coastal States has expanded more than 50,000 barrels a day; Murphy has, too. Charter, I think, came in with 81,000 barrels a day acquisitions. I think Toscopetro, about 58,000 or 60,000 barrels a day of acquired capacity. But I

think there is really a difference here, and probably, we had better let it go at that, as to what would constitute substantial entry.

Professor JOHNSON. Except the table does give a tentative definition, which is that these companies have constructed more than 50,000 barrels per day.

Dr. MEASDAY. Thank you.

Senator HRUSKA. Thank you, Mr. Johnson and Mr. Messick, for appearing. Our final witness is Edward Erickson.

Mr. Erickson, the clock has continued to tick. We do not have union rules here but we have some sense of decency to our hard-working staff. I know you do, too. Your entire statement will be placed in the record. If you can summarize it, it would be very helpful.

STATEMENT OF PROF. EDWARD W. ERICKSON, DEPARTMENT OF ECONOMICS AND BUSINESS, NORTH CAROLINA STATE UNIVERSITY

Professor ERICKSON. Fine sir, I appreciate that, and I will be happy to try to summarize it to the best of my ability. What I would like to do first is refer to S. 2387 itself, in particular to the initial declaration of policy where it states that first this Nation is committed to a private enterprise system and a free market economy, and I applaud that statement, and I am also committed to that.

Second, it states that there is a decline in competition in industries in which oligopoly or monopoly power exist. I am less familiar with the facts on which that statement is based, but I can state that it is the thrust of my testimony that the U.S. petroleum industry is not such an industry. It is not an industry that falls into that category.

The third major statement is that vigorous and effective enforcement of the antitrust laws in reduction of monopoly and oligopoly power can contribute significantly to reducing prices and other beneficial things. I would agree with that. And we have a situation in which the eight major oil companies are now in the process of substantial antitrust litigation in *FTC* v. *Exxon*, and I think that that is the proper forum for consideration of measures such as S. 2387 proposes rather than a legislative forum such as this instrument.

And fourth it states that the existing antitrust laws have been inadequate to maintain and restore effective competition in the petroleum industry. In my opinion, that is flatly wrong. The U.S. petroleum industry is effectively competitive. If anything, it is becoming more competitive over the last quarter century, and that is the fundamental thrust of my statement.

Now, I take the sponsors of S. 2387 at face value that they propose this legislation on vertical divestiture and disintegration for the industry because they want to increase competition and not because it is in any way punitive or because they have a simplistic notion of good guys and bad guys and people wearing white hats and people wearing black hats, and the oil industry is in the bad guy, black hat category and is somehow privately responsible for what we have come to know as the energy crisis.

There are many factors which were at work to cause the energy crisis, and in that regard, I would like to include in the record the

editor's introduction to a collection of essays which were published by the University of Toronto Press,[1] which deals with the overall questions of energy policy.

When one examines a competitive industry, or tries to examine the competitiveness of an industry, the standard set of boxes into which economists try and classify things can be labeled structure, behavior, and performance. The structure of the U.S. petroleum industry on its face is highly competitive. In fact, an indication of that is given by the number of firms that would be affected by S. 2387 itself. S. 2387 would affect at least 20-odd firms. That is a very large number of firms, and that's not all the firms in the petroleum industry, and not one of those has a very large share of activity at any stage of the industry. So on a structural basis, it is clear, I hope, that the industry is effectively competitive.

The behavorial box involves, for example, things like joint bidding for offshore lease sales and things of that nature. I have with me a copy of a paper which I have just completed on "Entry, Risk Sharing and Competition in Joint Ventures for Offshore Petroleum Exploration," [2] which deals with this particular aspect of the behavior of the industry, and I would also like to have that included in the record.

Last year I was a member of the Brookings Panel on Economic Activity, and while my charge was to examine oil supply and tax incentives, the whole tax issue is often clouded by discussions of competition and the effect of tax treatment of income from oil and gas production on competition, that I also dealt with that. I would also like to include that in the record, if you would indulge me in that regard.

Finally, with regard to performance, the alternate criterion for performance is the equality of prices with longrun marginal costs, and it is very difficult to assess on a product-by-product basis what longrun marginal costs are and examine the equality of prices to cost. But there is a summary index which it is possible to look at to get an indication of how that works out, and that index is longrun profitability.

In a chapter of the volumes that I edited for the University of Toronto Press, I deal with the U.S. petroleum industry, and in particular, I look at the record of longrun profitability and that examination forms the basis for a major part of my statement. I would like to include that chapter also in the record,[3] and summarize the finding. The summary of the findings are that the U.S. petroleum industry has demonstrated over a long period of time a record of profitability that is consistent with effective competition, and therefore, consistent with the proposition that prices equal longrun marginal costs in the industry. That longrun profitability has been at a level consistent with the profits earned by a U.S. manufacturing industry. Those profits are substantially less than the profits of industries in which most people would acknowledge that there may exist some element of market power. Moreover, the profits of the U.S. petroleum industry are equal

[1] See 1975 hearings, Subcommittee on Antitrust and Monopoly, Vertical Integration, part 1, p. 1055.

[2] See p. 2115.

[3] See 1975 hearings, Subcommittee on Antitrust and Monopoly, Vertical Integration, part 1, p. 1074.

approximately to their longrun cost of capital as that longrun cost of capital can be determined from standard financial analysis.

So, faced with all that evidence, evidence which I find very convincing, and evidence which forms a rounded whole where everything seems to fit together, the question is: What would you be buying, in terms of net benefits, from so radical a piece of legislation as the amputation of the various segments of integrated petroleum firms from each other, through vertical divestiture and disintegration? I think that clearly you'd be buying nothing in terms of increased competition. The industry is now competitive, very competitive. It is, I think, one of the more highly competitive industries in our economy. It would probably be competitive after such legislative surgery, but it is my feeling that it would be competitive at a higher level of cost. What I have tried to do on a very rough-and-ready basis is indicate where some of those higher costs might come from.

And, in that regard, what I did was look at some integrated oil companies, and some firms which are not as integrated, or perhaps not integrated at all in the sense that we commonly think of the term, although they have some aspect of integration, either in refining and marketing on the one hand, or in producing on the other. And what I found was, that if you examine the track records of these firms over a sufficiently long period of time, so that you feel that you can have some confidence in the numbers, that nonintegrated firms have to earn a higher rate of return than integrated firms, and not only that but the variance associated with that higher rate of return is greater as well.

Then what I did was say—suppose that we disintegrated the industry and that the now-dangling, formerly integrated components had to go out into the capital markets and attract capital on the same basis as nonintegrated firms—given the size of the investment in the industry, what would that cost come to in a yearly annual capital cost, associated with more uncertainty, less authority to plan effectively, and other efficiencies which firms are able to enjoy as a result of vertical integration? And I found on a minimum estimate, a lower bound estimate, of what those costs would be, that they would be in the neighborhood of, in 1974 dollars, $500 million a year—half a billion dollars a year. Those are not the only costs, but they are costs which, using readily available information, an academic economist, such as myself, can compute and determine. So that if there are any costs at all, then if one looks at a cost-benefit ratio in which there are some costs in the numerator and no benefits in the denominator, that cost-benefit ratio is not very good. It is highly unfavorable to proposals such as disintegration of the industry.

In rereading my statement, I realize that I had not emphasized as clearly as I would have liked to, the fact that my estimate of half a billion dollars a year is a lower bound estimate. It is a lower bound estimate for a number of reasons, which I state in my testimony. Those include that it is based on the net investment in the industry in 1974. In future years, there will be a higher net investment and so, consequently, at a higher cost of capital, costs of divestiture and disintegration will be higher. There is some evidence of increasing economies of vertical integration, which would be foregone by an arbitrary divestiture and vertical disintegration.

The half-a-billion-dollar cost is based on 1974 dollars and, unfortunately, I think inflation will continue to be a factor, so that, in dollar terms, those numbers will be higher. The trauma of divestiture and vertical disintegration will, at least, temporarily, inhibit investment decisions with consequent real cost not included in the estimate.

In addition to that, there are some other costs, or potential sources of cost increase, which are more difficult to specify and estimate. Those include potential increases in transportation costs, potential increases in inventory costs, potential increases in working capital costs, and increases in other costs associated with such factors as security of supply, the general level of economic activity, and inflation. I emphasize those in a supplement to my statement,[4] and I would also like to have that supplement included in the record.

Now, in addition to that, I have been following the record of these hearings, and I've read with interest a statement that Dr. Measday made. And if it would be all right, if I would not strain the patience of the committee, what I would like to do is comment briefly on that statement, as I see it, if that would be acceptable, sir.

Senator HRUSKA. Dr. Measday, you have some questions?

Dr. MEASDAY. No. I think Dr. Erickson would like to make another comment.

Senator HRUSKA. Oh, yes; by all means.

Dr. ERICKSON. What Dr. Measday did was look at the projection of the elimination of State regulation of offshore oil production for the Louisiana area, which was done by the White House, and was 350,000 barrels a day, and say, "Gee, we didn't get 350,000 barrels a day. In fact, production has been declining. There must be some withholding of supply." And not only that, then he examined in detail some selected operator performance criteria on selected leases in the Gulf of Mexico. As evidenced by that offshore bidding paper, I have had a strong interest for some time in offshore production, and consequently was quite interested in Dr. Measday's work, particularly in that 350,000 barrel-a-day estimate.

I think I can give you some background on where that might have come from. I was a staff consultant to the Cabinet Task Force on Oil Import Control, and one of my specific duties was to try and estimate what the excess producing capacity of the U.S. industry was at the time that the task force was in session. This was in 1969. I went to Texas and I went to Louisiana, and I talked with the conservation commission and the railroad commission, and I talked with a number of companies; and everybody agreed that there probably was some excess producing capacity if market demand factors were to go to 100 percent. But they weren't quite sure what it would be. I did the best I could, which turns out, in hindsight, to have been quite inadequate. And I came up with an estimate for the offshore Louisiana area of 700,000 barrels a day. Now, I suspect very strongly where that 350,000 barrels a day in 1970 came from, is that somebody in the White House said, "Gee, I wonder what it would be. Let's look at what Erickson did. We know he's wrong. Let's cut it in half. Half of 700,000 is 350,000." And so that's where that number came from. So I don't think we ought to hang a great deal on that. I'll take responsibility for that puzzlement.

[4] See p. 2115.

With regard to table 2: [5] When Dr. Measday talks about withholding supply in a framework in which things are not competitive, and when I look at table 2, what table 2 says to me is, rather than that things aren't competitive, that things are very competitive indeed, because, one of the problems when you have so many firms—and table 2 has got a long list of 23 firms there, and that's not all of the offshore operators—it's very difficult to enforce supply restrictions.

What one needs in a cartel is some kind of policing arrangement, and the best kind of policing arrangement, and the best kind of policing arrangement for a collusive restriction or some kind of conscious parallel action is the Government. And if you can get the Government to do that for you, as with, for example, tobacco marketing restrictions in my home State of North Carolina, then it is easy to make things go. What one needs to be sure of is that nobody's cheating on the arrangement. And a very important way to assure that nobody's cheating is to have stable market shares.

Now, if the companies were consciously trying to restrict output through some kind of conscious parallel action, or actual collusion to restrict output, what I would expect them to do is to use the device of setting maximum producing rates and maximum efficient rates in such a way that everybody stayed at a rate which really was what their maximum production—what their production was going to be. And then through the device of the U.S. Geological Service and their reports to the U.S. Geological Service, everybody could make sure that nobody was cheating on that agreement. Instead, what we see is a tremendous variation in rates of actual production to MER's, and on top of that we see tremendous variation going up and down from year to year, so that if this were actually an anticompetitive arrangement, we would expect to see stable market shares rather than, in Dr. Measday's table 2, 12 of the ratios of shortfall of production to MER going up and 11 of them going down.

That's a great deal of instability, and what that indicates to me is that those MPR's and MER's, for reasons which I'm sure that the reservoir engineers have explained to you, are generally overstated, because they can serve as a ceiling to the companies, and the companies want to produce this much. If they can, they produce more on a year-to-year basis, and the ratios change in that direction. If economic or operating conditions affect them adversely, they change in another direction. But in no way do I believe that one can look at those as any indication of anticompetitive activity on the part of the companies.

And I'd be happy, either in questions or afterwards on a private basis, to discuss this more with Dr. Measday, because we have talked about these things before, and I'm hitting him cold with this, and will pursue it without taking up your time.

There are two other things I would like to address. One is Mr. Kruger's testimony. Mr. Kruger made some assumptions and one of them was that the divestiture of oil companies was a desirable goal. I do not believe that, because there are no benefits, and the costs can be substantial. And the other was this business of long-term con-

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[5] See 1975 hearings, Subcommittee on Antitrust and Monopoly, Vertical Integration, p. 69.

tracts. Now, I am not a lawyer, but I can read the English language. And I read section M, on page 3 of the copy of S. 2387 which I have, to say that "control means, among other things, substantial or long-term contractual relations." If we are going to break up the industry and also not permit it to achieve at least some portion of the economies and efficiencies that it previously achieved with vertical integration by long-term contracting, then I think costs are going to go up substantially. An example of those costs would be the Alaska pipeline situation which you were discussing. I am sure that for a resource as large as the Alaskan oilfields that that oil would find a way to come to market and that a way would be found to finance some pipeline. But that would be at substantially higher costs, higher capital costs, because of the lack of the kind of guarantees that the integrated companies can provide that now exist.

And I am also convinced that, if the wording of the bill remains the way it is, that that sloppy wording will come back to haunt us, in the same way that the sloppy wording of the Natural Gas Act of 1938 has come back to haunt us in terms of the regulation-induced natural gas shortage that we now are experiencing.

Finally, I would like to say—although the bill addresses vertical disintegration—something about horizontal disintegration. In my opinion, horizontal diversification of oil companies into other aspects of energy supply is not a problem. The question is not will company A aggressively develop themselves to sell coal to compete with company A's own oil and gas production? The real question is, rather, whether the management of company A, seeing an opportunity for a profitable investment of sales in coal, can complacently pass up that opportunity on the assumption that some other company, X, Y, or Z, will not seize the opportunity and run with it. The record indicates that complacency is not rewarded in the competitive oil industry. This is the essence of dynamic competition: Rather than being an indication of anticompetitive activity, the drive of energy companies to meet increased U.S. energy demands from whatever sources will efficiently fit into the overall energy mix on a cost-effective basis is, I believe, a hallmark of effective competition.

Thank you.

Senator HRUSKA. Thank you, Dr. Measday?

Dr. MEASDAY. I think I would just like to make one comment for the record, Senator, and that is that the study which the staff did last summer—and I think this was made clear in the colloquy in the course of the hearings—did not amount to a charge that the major oil companies were engaged in collusion to withhold domestic production in the offshore area. And I think we made this very clear at the time. In fact, we did not find any evidence to speak of that the companies were producing very much less than what you could expect to be produced from the equipment in place. Our real question was whether companies which were integrated and had a great many interests outside of domestic production had, in fact, made the socially desirable levels of investment in offshore production. And I think this is really what the question was and I will be happy to talk to Professor Erickson later about the whole question of the offshore area.

Professor ERICKSON. Yes, there is a question there. And the question is the level of incentives to make those investments and, you

know, why are those ratios, other than the fact that the companies like to have some elbow room underneath the MPR's and the MER's to maneuver, uniformly less than one? And I think that one of the answers to that is in terms of economic incentives. Let me go back to the Cabinet task force's experience. When the Cabinet task force was in session, the reference price that we used was $3.30 a barrel of 35-degree sweet Louisiana crude at Tidewater. The question is what economic incentive now exists for old oil? What happens if you take the $5.25 old oil price, the kind of price that is necessary, that you have to use as the incentive price for somebody who is trying to expand production through enhanced recovery from an existing reservoir? Say, he has got a reservoir that is on the decline and it has declined to 60 percent of his base production; and he knows that, with some investment, he could kick that reservoir up to 75 percent of base production, a 25 percent increase in output. What is the economic incentive he faces?

If you take $5.25 and try to put it into 1969 dollars and substract depletion out from it, you find that the price incentive for that kind of investment, a significant investment, an investment which, I believe, would generate significant incremental supplies for domestic oil for U.S. consumers, has eroded from $3.30 in real terms to $2.65. That number in itself, it seems to me, goes a long way to explain first, the unformly less than 1 ratios of Professor Measday's table 2, and, second, also the fact that the United States is experiencing such a substantial decline in crude oil production. You just cannot produce oil that is going to cost you $4, $5, $6, $7 for enhanced recovery activities, well workovers, that sort of thing, if the incentives are only 2.65. And it is those simple kinds of facts, rather than unspecified, broad-brush charges of evils of vertical integration, that are so strongly responsible for the pickle that we are now in.

Dr. Measday. Perhaps we can explore this, Senator, in a series of questions in writing.

Senator Hruska. Very well. And if you wish to submit a supplemental statement on it and if you have any surrebuttal, Doctor, you will be given that privilege.

Dr. Measday. Thank you, sir.

Mr. Bangert. Mr. Chairman, if I might, I would just like to add that, although majority staff and Dr. Erickson normally disagree, we have a great affection and respect for him and we appreciate his being here.

Professor Erickson. Thank you, Mr. Bangert.

Senator Hruska. Well, that is fine.

Now then, as I understand it, we are going to have a session here tomorrow.

Mr. Bangert. At 9 o'clock, yes, Senator.

Senator Hruska. Chaired by——

Mr. Bangert. Senator Abourezk.

Senator Hruska. On this same bill?

Mr. Bangert. On the same bill, yes, sir.

Senator Hruska. Very well.

Well, thank you very much for appearing, Mr. Erickson, and we appreciate the request you made for additional insertions into the record. They will be put in the record.

Professor ERICKSON. Thank you. I will provide copies.

[The prepared statement of Prof. Erickson follows. Testimony resumes on p. 2131.]

PREPARED STATEMENT OF EDWARD W. ERICKSON, PROFESSOR OF ECONOMICS AND BUSINESS, NORTH CAROLINA STATE UNIVERSITY, NORTH CAROLINA

THE COSTS OF DIVESTITURE AND VERTICAL DISINTEGRATION OF THE U.S. PETROLEUM INDUSTRY

INTRODUCTION

These hearings are focused upon potential legislation which will involve some measure of vertical divestiture of the firms in th U.S. petroleum industry. I presume that your attention is thus focused because you believe that such divestiture will have net positive benefits for the citizens of the United States. In the popular mind, these benefits are often assumed to include rooting out monopoly and lowering energy prices to U.S. consumers. I believe that these ideas are wrong and potentially harmful. To justify so drastic a policy prescription as divestiture upon so seriously awry a misconception would be apt to compound rather than alleviate the problem we face. I appreciate very much the opportunity to discuss with you the gap between the public perception and the economic reality concerning the effectiveness of competition in the U.S. petroleum industry.

There is monopoly power today in the world petroleum industry. But it resides in the governments of the producing companies. Divestiture of the major oil companies from their pipelines, refineries, producing properties or service stations would have no discernible effect to make the domestic petroleum industry more effectively competitive. In fact, contrary to the views of the Federal Trade Commission, the press, and others, the most significant competitors of any one of the major oil companies are the other majors. And that competition is vigorous, effective and socially beneficial. It does Americans a disservice to lead them to believe that there are some easy panaceas—such as antitrust action or legislative amputation—to our energy policy problems. The truth is that the creation of domestic resources and the purchase of security of supply is a costly and time-consuming process.

The U.S. petroleum industry is now effectiely competitive. There are many firms. Concentration is low. Entry and exit are everyday phenomena. Resources are mobile. Long-run profitability indicates competitive performance. The rate of technical advance is strong and impressive. The largest companies compete vigorously with each other.

If the major benefit of divestiture is presumed to flow from the breakup of an alleged monopoly, that benefit is illusory. It is not too strong a figure of speech to say that the contribution of divestiture to the effectiveness of competition in the U.S. petroleum industry would be equivalent to the contribuution of another ton of salt to the salinity of the oceans. The U.S. petroleum industry is now effectively competitive. There are many ways to gauge the effectivenss of competition. These include measures of structure, behavior and performance. Performance is the ultimate test. Competitive performance results from resource mobility in an open economy. It is possible that the initial effect of divestiture would be to inhibit resource mobility by increasing uncertainties for investment decision makers. After adjustment to the surgical trauma which would follow divestiture, the U.S. petroleum industry would still be effectively competitive. But it is likely that effective competition under divestiture would take place at a generally higher level of costs. American consumers would ultimately have to bear those costs. In this and other respects, it would be a disservice to the American people.

Just as divestiture will not create any economic miracles through elimination of a monopoly component in U.S. energy prices, neither will divestiture result in a reduction of the costs of securing energy resources for U.S. consumers. The incremental costs of energy to the U.S. economy are determined by the prices and cohesion of the OPEC cartel—a monopoly of foreign governments, not U.S. companies—and the facts of nature and geology and the limits of technology. Divestiture will not change the facts of nature and, I believe, cannot therefore be relied upon to reduce energy costs to the U.S. consuming public. Moreover, as I will discuss in more detail below, it is likely that divestiture

would result in an increase in costs for the U.S. petroleum industry. Divestiture will not make the U.S. petroleum industry more effectively competitive. Divestiture will not work any magic to create resources out of whole cloth. Divestiture could inhibit the investment process necessary to create the domestic energy capital the U.S. requires with a consequent increase in the U.S. dependence upon energy imports. Divestiture would cost U.S. consumers money.

If there are no economic benefits from divestiture, are there any sound reasons for pursuing such a policy? Quite frankly, I do not believe so. Such a drastic policy as divestiture must have clear and convincing net benefits. Lacking such benefits, divestiture would be an ill-advised policy. I believe divestiture to be ill-advised, and I believe divestiture to be espcially ill-advised if the rationale for divestiture is the creation of a more effectively competitive U.S. petroleum industry than that which now exists.

Competition in the U.S. Petroleum Industry[1]

The United States has traditionally relied on free market forces and decentralized decision-making for solutions to resource allocation problems. Competition in the U.S. petroleum industry is an important topic. Bigness is unfortunately confused with monopoly power. This confusion clouds the consideration of rational policy responses to the current energy crisis. The discussion of the competition issue generates a great deal of emotion on both sides of the question. It is too much to expect that we will be able to settle the issue here; it seems to be a permanent feature of political economics. We do, however, hope that we can illustrate convincingly with hard facts some of the reasons why, in our analytical judgment, the U.S. petroleum industry is effectively competitive.

I here focus upon the record of long-run profitability in the U.S. petroleum industry. Profitability is an important index of the existence and exercise of market power. The petroleum industry is a large industry, and the firms within it are also large. Effective monopoly results in a divergence between long-run marginal costs and prices. Prices in excess of long-run marginal costs (including a competitive return on invested capital) result in excessive earnings. These excessive earnings are reflected in higher than normal, above average rates of return on stockholders' equity capital. Thus, the rate of return on corporate stockholders' equity capital is one measure of the presence or absence of market power in the petroleum industry.

The record of long-run profitability in the U.S. petroleum industry indicates that the firms in this industry do not enjoy substantial, systematic market power. This index of effective competition yields positive results whether the comparison is to all U.S. manufacturing, Moody's 125 Industrials, Moody's 24 Public Utilities, or a group of industrial firms known to possess market power, or the cost of equity capital for the petroleum industry.

Market power shows up as economic profits. The U.S. petroleum industry has not earned the kind of long-run returns on stockholders' equity which are to be expected for firms that enjoy substantial, systematic market power. Recent profits of the petroleum industry have been much higher than the long-run average. This is partly a result of the energy crisis and its attendant shortages. The energy crisis has been policy induced and is not a result of private market power of the U.S. petroleum industry. Long-run profitability is the appropriate measure of competitiveness. As firms have adjusted to changed circumstances, profits have, in general, been falling. This is in part a result of resource mobility in competitive markets. Were U.S. energy markets less restricted by controls and regulations, this process would work more uniformly and rapidly to the benefit of the U.S. public.

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[1] My written statement submitted previously to this Subcommittee which accompanied my letter to Senator Bayh of November 13, 1975, consisted of two chapters from a book I recently co-edited. The book is titled *The Energy Question* and it deals with the short- and long-run causes and consequences of the energy crisis. Volume 1 focuses upon the world dimensions of the problem and Volume 2 focuses upon North America. The two chapters which formed my earlier written statement are the editors' introduction to Volume 1 and the chapter I co-authored in Volume 2 which deals with the U.S. petroleum industry. The editors' introduction to Volume 1 outlines some of the interrelated policy failures which contributed to and have exacerbated the problems with which we now must cope. The chapter titled "The U.S. Petroleum Industry" from Volume 2 summarizes my views on the effectiveness of competition in the U.S. petroleum industry. This section of my current testimony is a summarization of the views presented there and earlier furnished to the Subcommittee.

Table 1 compares the overall average profitability of the eight major petroleum companies named in the FTC complaint with ten large industrial concerns generally conceded to possess some market power. The comparison indicates that each of the nonpetroleum firms earns more than the average for the eight major petroleum companies. The average for the ten nonpetroleum firms is 20.2 percent. The average for the eight major petroleum companies is 11.1 percent. The ten-company nonpetroleum average exceeds the average for the eight major petroleum companies by 9.1 percentage points, or 82 percent.

Table 2 compares the rate of return on stockholders' equity for the eight major petroleum companies with the average for Moody's 125 Industrials on a year-by-year basis from 1951 to 1971. In 16 of 21 years, the average for the eight major petroleum companies is less than that for the firms that make up Moody's 125 Industrials. Moreover, in eight of the ten years covering 1962-71, the rate of return for the eight major petroleum companies was less than the return for Moody's 125 Industrials. In one year, 1967, they were equal. In only one year, 1970, did the return for the eight major petroleum companies exceed that of Moody's 125 Industrials—and then by only six-tenths of one percentage point, or 5.8 percent.

TABLE 1.—A COMPARISON OF RATES OF RETURN ON STOCKHOLDERS' EQUITY BETWEEN 10 SELECTED LARGE FIRMS IN CONCENTRATED INDUSTRIES AND THE 8 MAJOR PETROLEUM COMPANIES

Firm	Rate of return on stockholders' equity, 1972	Firm	Rate of return on stockholders' equity, 1972
General Motors	17.8	Proctor and Gamble	19.1
Xerox	23.4	Pfizer	17.7
IBM	18.7	Eli Lilly	29.8
Burroughs	15.4		
Bristol-Myers	17.8	10-company average	20.2
Eastman Kodak	20.4	Average for 8 major petroleum companies (1971)	11.1
Kellogg	22.3		

TABLE 2.—COMPARISON OF RATES OF RETURN

Year	Moody's 125 industrials	Eight largest petroleum firms	Year	Moody's 125 industrials	Eight largest petroleum firms
1971	11.2	11.1	1960	10.8	10.2
1970	10.2	10.8	1959	11.7	9.8
1969	12.2	10.8	1958	10.2	9.6
1968	13.0	12.4	1957	13.2	13.1
1967	12.4	12.4	1956	14.3	14.1
1966	14.2	11.6	1955	15.4	13.7
1965	13.7	12.1	1954	13.2	12.8
1964	13.3	10.5	1953	13.4	13.9
1963	12.4	11.5	1952	13.2	13.6
1962	11.6	10.7	1951	14.6	15.3
1961	10.5	10.4			

Comparison to averages such as Moody's 125 Industrials and all manufacturing industry may be misleading. This is because some of the nonpetroleum firms in these averages may possess market power (see, for example, Table 1). This makes the average themselves higher than the normal, long-run, competitive rate of return. There is a way to correct for this. A standard procedure in regulatory proceedings is to calculate the cost of equity capital for the particular firm(s) in question. Earnings on equity capital are then compared to the cost of equity capital.

Modern analysts typically calculate a range for the cost of equity capital. This is because a range is more reliable than a point estimate. Using standard techniques for the years 1967-71, the range for the cost of equity capital for the eight major petroleum companies is 10.3 to 12.3 percent. The midpoint of this range is 11.3 percent.

For this same 1967-71 period, the average earnings on stockholders' equity for the eight major petroleum companies were 11.5 percent. Within the limits of the precision of such calculations, the earnings on stockholders' equity (11.5 percent) and the cost of equity capital (11.3 percent) are approximately equal. This is what we would expect in an effectively competitive industry operating

in an economy with well-functioning capial markets. The rate-of-return data indicate that the eight major petroleum companies are part of a competitive industry and are themselves earning the competitive rate of return. If simple monopoly power or more complex collusive behavior were an important feature for the petroleum industry, one would expect it to show up in the rate-of-return data. It does not.

The conclusion that I draw from these long-run profitability data is that the U.S. petroleum industry is effectively competitive. But long-run profitability data are not the only data and analyses which support the conclusion of an effectively competitive U.S. petroleum industry. This conclusion is also supported by the record of: The rate of return to offshore activity, the patterns of entry and bidding in competitive lease sales for offshore acreage, entry into refining, producing and other sectors of the industry, and the long-run patterns of real refinery margins and product prices net of state and federal taxes.

When all of these factors are considered together, they form a rounded whole and support a robust conclusion. That conclusion, I repeat, is that the U.S. petroleum industry is effectively competitive. Divestiture will not improve the competitive performance of the U.S. petroleum industry. But divestiture would increase the general level of costs at which this competition occurs.

The Costs of Divestiture and Disintegration

The U.S. petroleum industry is generally thought of as having four vertical stages. These are producing, refining, transportation and marketing. These four stages, however, do not tell the whole story. First of all, the transportation sector actually consists of two separate stages. The first of these two stages is the transportation of crude oil to refining centers. The second is the transportation of refined products to marketing outlets. But even this breakdown glosses over many significant details of the organization of the industry.

Consider, for example, the producing stage of the industry. There are many separate functions which contribute to the makeup of what is commonly referred to as crude oil production. These functions, in approximate temporal and vertical order, include geological and geophysical prospecting, lease acquisition, exploratory drilling, platform construction, development drilling, well logging, operation of production facilities, well workovers, flow lines, lease tanks, gathering systems and field terminals. This pattern is repeated with stage specific variations in the other sectors of the industry.

In this complicated pattern of overlapping functions and activities, the firms engaged in the U.S. petroleum industry use at various times and circumstances different combinations of company owned and purchased contract services. Within the producing sector, there is a large number of specialty firms which provide, for example, contract drilling services, pipeline construction, well workover services, geophysical work and platform construction. These specialty firms constitute sub-industries within the overall produucing sector which is itself a stage of the overall U.S. petroleum industry. The companies whose primary commitment in the producing sector of the industry is to finding and producing oil also provide many of these services directly with their own company crews.

Whether or not a given company, at a given time for a given project chooses to purchase contract services or generate required services directly with its own crews depends upon the comparison of the net advantages to the company of the alternatives under the circumstances associated with at project. As it is with the specific details of the producing sector, so it is with general patterns of vertical integration for the industry at large.

No company is completely vertically integrated and self-sufficient in the sense that it provides all the services necessary to find and produce its crude oil; produces all of the crude oil required by its refineries; transports that crude oil in its own trucks, barges, tankcars and pipelines; refines only crude oil produced by itself in its own refineries; moves the refined product output of its refineries in its own transportation facilities; and sells its refined products only under its own brand name from its own market outlets.

The pattern and extent of vertical integration is different for different companies. The importance of activities at each stage of the industry relative to the total activities of a company varies from specific company to specific company. Moreover, not only large companies have found it advantageous to be vertically integrated. Many smaller companies are also integrated into several

stages of the industry. The patterns of vertical integration vary across firms, and each firm pursues its own advantages as it sees it.

There is some casual evidence that the degree of vertical integration in the U.S. petroleum industry may be increasing. Examples of this trend, if it is a trend, are the merger of Hess and Amerada to form Amerada-Hess, the growth by Ashland Oil and the potential expansion of Louisiana Land and Exploration into refining. This may be evidence that at the moment the net advantages are running in the direction of increased economies of vertical integration. But the degree of vertical integration does vary across firms and at each stage of the industry there are many firms represented who have little or no vertical integration with respect to the major stages of the industry.

This heterogeneity is at once economically and socially pleasing and methodologically distressing with respect to specifying the costs of divestiture and vertical disintegration. The observed heterogeneity is economically and socially pleasing because, together with the large numbers of firms in the industry, the low market shares of even the largest firms, and the evidence of long-run profitability and other indicia, it reinforces the conclusion of effective competition. Heterogeneity is evidence that under many circumstances a firm does not have to be fully integrated to be economically viable. Heterogeneity is methodologically distressing because it complicates the problem of estimating the costs of divestiture and vertical disintegratioon.

The question is as follows. If vertical integration is an important source of economies, why do not all firms have to be vertically integrated (and perhaps vertically integrated to the same degree) to be economically viable? If we observes some firms which are not, or hardly at all, vertically integrated, but which nevertheless are viable economic entities, does it not follow that we can divest and vertically disintegrate the U.S. petroleum industry with no cost to economic efficiency, U.S. society and American consumers? I believe the answer to this question is no.

The answer to this question ties back to the fact that the U.S. petroleum industry is highly and effectively competitive. In a competitive industry, small advantages are important. This is especially true in a technologically dynamic, capital-intensive industry such as the U.S. petroleum industry which operates under uncertainty and changing circumstances. Vertical integration improves the planning process, reduces uncertainty with regard to investment decisions, and broadens the earning base while improving the portfolio characteristics of asset composition.

At any given stage of the industry, or for any interface between stages, it is possible to discuss these advantages on an anecdotal basis. But it is also possible to see their impact in a more generally systematic and quantifiable way. I discussed above the importance of long-run profitability data in terms of assessing the effectiveness of competition in the U.S. petroleum industry. It is also possible to use profitability data to indicate the advantages of vertical integration and calculate a rough approximation of the cost of divestiture and vertical disintegration. In this calclation, the heterogeneity of firms in the U.S. industry becomes an advantage.

In a competitive industry, profits are a cost. They are the cost of inducing firms—as the agents of society—to allocate resources to those activities which society values. If vertical integration reduces uncertainty, facilitates planning and contributes negative covariance to the earnings of the asset structure of the firm, then those firms which are relatively more vertically integrated will have lower costs of capital than less vertically integrated firms. It is possible to test this hypothesis by examining the long-run profitability data for various classes of firms.

Consider firms which fall into three broad groups. These groups are: Non-integrated producers, refiners-marketers, and vertically integrated firms. The average rate of return on invested capital for these classes of firms over the period 1951-1973 was as follows: Non-integrated producers, 0.152; non-integrated refiners-marketers, 0.099; and vertically integrated firms, 0.086.

These return numbers, together with data on the amount of capital invested, permit a rough approximation of the cost to U.S. society of divestiture and vertical disintegration.

At the end of 1974, for the 29 firms surveyed by the Chase Manhattan Bank, the total domestic net investment of the U.S. petroleum industry in producing, transportation, refining, marketing and other assets was approximately 52 billion dollars. Gross investment was 93 billion dollars. Net income earned in the

United States was 6.4 billion dollars. This is equivalent to a rate of return on net investment of 12.3 percent—a competitive rate of return on net investment. There are no hard data on what proportion of total net investment in domestic U.S. petroleum industry investment is accounted for by the 52 billion dollars which the 29 firms represent. But on a worldwide basis, these 29 companies account for 75 percent of non-communist crude oil production. The 20 largest U.S. companies accounted for 86 percent of 1970 U.S. crude oil production capacity and 87 percent of U.S. gasoline refining capacity. Of the 52 billion dollars of domestic U.S. net investment for the 29 companies, 50 percent was in production, 22 percent in refining, and 28 percent in marketing, transportation and other categories. Marketing represented 55 percent of the non-production, non-refining investment. On the basis of these figures, for the calculations at hand, I assume that the 29 companies account for about 85 percent of the total domestic net investment in the U.S. petroleum industry.

The question then is: What would be the cost to the U.S. public of divestiture and vertical disintegration of the U.S. petroleum industry? If divestiture and vertical disintegration raised the cost of capital and consequent required earnings necessary to remain economically viable for the severed components of previously integrated companies by a factor of proportionality equal to the relative 1951-73 difference between the average for integrated companies and the averages for non-integrated producers and refiner-marketers, the overall weighted average rate of return on net domestic assets in the U.S. petroleum industry would have to increase by about 7.5 percent. This may not appear to be a very large number, but the U.S. petroleum industry is a large capital intensive industry.

A 7.5 increase in the required rate of return necessary to offset the loss of the net economies and operating efficiencies which would result from divestiture and vertical disintegration amounts to a yearly cost of over half a billion dollars on a 1974 base. This cost would ultimately have to be borne by the consuming U.S. public.

In addition, this estimate of the cost to American society of legislative amputation of the U.S. petroleum industry through divestiture and vertical disintegration is an underestimate of the prospective cost of such a policy. There are a number of reasons for this. Some of these reasons are: 1. The future net investment of the U.S. petroleum industry will be higher than that of 1974. 2. There is some evidence of increasing economies of vertical integration which would be foregone by an arbitrary divestiture and vertical disintegration. 3. The half a billion dollar estimate is based on 1974 dollars and unfortunately, inflation will make it larger. 4. The trauma of divestiture and vertical disintegration will at least temporarily inhibit investment decisions with consequent real costs not included in the estimate.

On the basis of both its failure to enhance competition in an already effectivly competitive industry and, most importantly, the cost burden it imposes upon U.S. consumers, divestiture and vertical disintegration of the U.S. petroleum industry is an ill-advised policy.

Conclusions

The lessons to be learned here are important. There is a dangerous tendency for us to seek costless solutions to our problems. The example at hand is the outcry with regard to "monopoly" in the energy industries. It is tempting to believe that by some miraculous process resources can be created by the stroke of a pen, a regulatory rulemaking, the passing of a law, an executive order or a court decision. Such is not the case.

It is important that Congress realize that there are no immediate miracles to be wrought by slaying imaginary dragons of monopoly, and that Congress proceed on a course that is consistent with the principles of how things get done in American society. This last, the matter of principles, is vitally important. There is a tendency, in Congress and elsewhere, to respond to the problems of policy and regulatory failures by more regulation and additional ad hoc policies. Such a response only prolongs and worsens the situation and makes its ultimate remedy more difficult and costly. I believe that we are, as always, in a critical era of choice. To impose a policy of divestiture and vertical disintegration upon the U.S. petroleum industry, however pure the intentions, would

in my opinion be an unfortunate step down the road toward the Anglicanization of our economy.

It is impossible to "make the companies pay" for an ill-advised policy such as divestiture and vertical disintegration of the U.S. petroleum industry. In a competitive economy, the companies are simply the agents of society. Society itself must pay. The initial costs of divestiture and disintegration of the U.S. petroleum industry would be at least half a billion dollars a year, and these yearly costs would grow in magnitude as the years go by.

Supplement to Prepared Statement of Edward W. Erickson

The half a billion dollar estimate of the costs of vertical disintegration and divestiture of U.S. petroleum industry presented in my testimony must be regarded as a *minimum* estimate for two general reasons. Those are: 1. It is a lower bound estimate of the effects of increases in capital costs for the reasons cited in my testimony. 2. It does not include increases in costs other than capital costs which may result from vertical disintegration and divestiture.

Sources of potential cost increases other than higher capital costs include: 1. Increases in transportation costs. 2. Increases in inventory costs. 3. Increases working capital costs. 4. Increases in other costs associated with such factors as security of supply, the general level of economic activity and inflation.

These potential additional cost increases associated with factors other than increased capital costs alone are very difficult to estimate, but that does not make them less real. My minimum cost estimate based upon capital cost increases was amenable to calculation by an academic economist based upon readily available information. It is a minimum cost estimate.

It must be emphasized, however, that since there are no benefits in terms of increased competition to be expected from a policy of vertical disintegration and divestiture of the U.S. petroleum industry, a minimum estimate of half a billion dollars to the U.S. economy of such ill-advised policy yields a very unfavorable cost/benefit ratio.

Entry, Risk Sharing and Competition in Joint Ventures for Offshore Petroleum Exploration, by Robert M. Spann and Edward W. Erickson [1]

Joint ventures provide formidable and interesting problems for antitrust scholars and are especially relevant to questions regarding the competitiveness of the petroleum industry. In some instances, joint ventures may be a means of pooling resources to meet large minimum capital requirements,[2] or they may be an efficient means of risk sharing. In other instances, joint ventures may have severe anti-competitive impacts by reducing the number of firms in the market. Joint ventures may allow actually or potentially competing firms to meet and organize collusive arrangements.

Joint ventures are especially prominent in the exploration stage of the petroleum industry.[3] This is particularly true in offshore exploration. The U.S. Department of Interior periodically auctions off the rights to offshore drilling sites on the basis of competitive bidding. In the case of offshore petroleum exploration, joint ventures are formed to bid on and develop (if any successful bids yield tracts with commercially recoverable oil and gas reserves) drilling sites. Joint ventures now account for roughly 85 percent of all bids submitted in federal Outer Continental Shelf (OCS) lease sales, and joint bids as a fraction of total bids have been increasing over time. In the first federal OCS sale in 1954, only 10 percent of all bids were submitted by joint ventures. A recent Federal Trade Commission report (11) is typical of allegations that the energy crisis

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[1] The authors are Associate Professor of Economics, Virginia Polytechnic Institute and State University and Professor of Economics and Business, North Carolina State University. The research on which this paper is based was supported by the U.S. Bureau of Mines Contract No. SO 133121. Opinions and conclusions are the sole responsibility of the authors.

[2] Examples of such joint ventures include the eight companies which jointly built the Boulder Dam in 1931 and the four company combine which built the Toronto subway system in 1953.

[3] The conditions which have historically given rise to joint ventures in exploration are discussed by J. W. McKie (*20*) and W. Mead (*21*). Exploration is not the only segment of the petroleum industry in which joint ventures occur. A significant number of petroleum pipelines are constructed and operated by joint ventures. Some of the conditions which lead to joint ventures in offshore exploration are discussed below.

is at least partially due to aleged anti-competitive practices in the petroleum industry such as joint ventures in offshore exploration.[4]

In what follows, we evaluate joint venture bidding behavior in OCS sales. The predictions of a collusive or anti-competitive model of joint entures are an inverse relationship between the incidence of joint ventures and the number of bidders; stable market shares in OCS sites won; a positive relationship between firm size and participation in joint ventures; few joint ventures between large and small firms; and identical bids by different firms.[5] The results of twenty years of federal OCS lease sale experience are compared to these predictions.[6] The collusive model is not consistent with the record of bidding behavior.

We also examined the antitrust implications of joint ventures as if they were outright mergers.[7] We apply the Department of Justice 1968 merger guidelines to the joint ventures engaged in by the eight largest petroleum companies.[8] The analysis of the collusive model is a positive test. The merger analysis is a normative test. Joint ventures are not mergers, so application of the arbitrary merger guidelines is a severe test. Under a restrictive merger test such as we use, when only the joint ventures engaged in by majors are examined, barely one-quarter of these joint ventures would violate the 1968 Justice Department merger guidelines.

Joint Ventures and Competition in Federal OCS Lease Sales

The Outer Continental Shelf Lands Act of 1953 gave the United States government responsibility for the administration of offshore mineral rights in the OCS.[9] The Bureau of Land Management of the U.S. Department of the Interior holds sealed bid auctions for mineral rights on specific OCS tracts. The tracts let for bidding are generally 5000 acres. Auctions typically have been of the variable bonus, fixed royalty type in which bids represent an initial fee paid

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[4] As of this writing, a number of individual states, in addition to the FTC, have filed formal antitrust complaints against major petroleum firms. Public opinion polls reflect increasing antitrust concern over the petroleum industry as well. A Gallup Poll conducted in December, 1973, indicated that 25 percent of those polled blamed "oil companies" for the energy crisis. Whether public opinion polls and the FTC actually reflect the facts of the energy crisis, or are the result of human tendency to see conspiratorial scapegoats can only be determined by empirical analysis. As Low (*16*), p. 294, has stated, "There is a clear parallel between national tendencies to explain political events as arising from conscious human conspiracy (sometimes known as McCarthyism) and to explain economic events as arising from similar conscious human conspiracies. The fact that Communist spies and price-fixing conspirators both exist in fact as well as in fancy, makes it even easier to turn them into universal explanations. It is striking how the young Walter Lippman, in 1914, described the conspiracy provisions of the Sherman Act in terms very similar to those he and other observers used almost 40 years later to explain McCarthyism."

[5] The reason for each of these predictions is straightforward. Joint ventures may be sharing arrangements. (For example, see Stigler (*27*), *U.S.* v. *Addyston Pipe and Steel* example, see *U.S.* v. *Penn-Olin Chemical Company* (*35*). Collusive often involves market anti-competitive if joint ventures represent a substitution of joint bids for solo bids. (For *Corp. et al.* (*37*). Collusive arrangements are more stable the fewer the number of firms *Company* (*30*), *American Tobacco Company* v. *U.S.* (*1*), and *U.S.* v. *Westinghouse Electric* involved in the collusive arrangement. See Stigler (*27*). Thus, use of joint ventures to facilitate collusion would be rational only if they involved larger firms. To the extent that joint ventures facilitate entry into petroleum exploration, large firms (if they are using joint bidding as a method of enforcing a collusive arrangement) could reduce the entry of smaller firms by denying them access to joint ventures. Identical bids are frequently alleged as evidence of collusion. (For example see the second tobacco case (*1*), *U.S.* v. *Eli Lilly and Company, et al.* (*34*), and *U.S.* v. *Charles Pfizer and Company, et al.* (*36*).

[6] Joint ventures could be collusive or anti-competitive even if only some but not all of these conditions were met. The probability that joint ventures are collusive is very small if none of these conditions are met. Each of these implications is discussed in more detail below.

[7] The analysis of joint ventures as analogous to mergers under Section 7 of the Clayton Act is consistent with recent Supreme Court decisions in antitrust cases. For example, in the Penn-Olin Case, the Court stated. "Overall, the same considerations apply to joint ventures as to mergers, for in each instance we are but expounding a national policy enunicated by Congress to preserve and promote a free economy," *U.S.* v. *Penn-Olin Chemical Company*, (*35*), p. 170.

[8] The eight largest petroleum companies are the firms named in the FTC complaint. They are: Exxon, Mobil, Texaco, Gulf, Shell, Standard of Indiana, ARCO and Standard of California. Limiting the sample to joint ventures engaged in by these majors substantially limits the number of joint ventures under consideration and biases the results in the direction of anti-competitive findings. And the unbiased form of this test is itself overly strong in many ways. A joint venture may only involve a few tracts which constitute a small percentage of each firms' exploration effort or total production, rather than an outright merger of the two firms.

[9] Outer Continental Shelf Lands Act, Public Law 212, 83rd Congress, 2nd Session, 1953.

to the government in exchange for mineral rights.[10] In addition, if the tract is commercially productive the winning firm or firms (in the case of a joint venture) pay the government a fixed royalty of one-sixth of the value of production from the tract.[11]

The dollar amounts involved in offshore bidding have been large. A joint bidding group led by EXXON recently bid a total of $632.4 million for six offshore Gulf of Mexico tracts. The June 19, 1973 lease sale netted the U.S. Government $1.5 billion in bonus payments. The average winning bid was $2,908.40 per acre.[12]

Firms may bid for OCS rights either individually or in groups as a joint venture bidding combine. The typical bidding combine consists of a group of firms in which each firm has some fixed share of both the bonus bid and future production. If a joint venture wins a tract or tracts, it develops that tract as a unit with each firm incurring the costs of exploration and revenue from crude oil and natural gas production in proportion to its initial exposure.[13]

Conditions leading to joint ventures in offshore petroleum exploration

In general, there are four conditions which might lead to joint ventures in a competitive market.[14] They are: (1) Large absolute capital requirements; (2) risks associated with entry and operation may be large enough so that joint ventures provide a convenient method of risk sharing; (3) separate operations may be economically wasteful; and (4) the internalization of external economies or spill-over effects.

In the case of offshore petroleum exploration, the first two conditions are clearly present. In the 1973 OCS lease sale, the average winnig bid was $15 million per 5000 acre tract.[15] Development of a productive offshore tract required a minimum initial capital investment on the order of $5 to $10 million.[16]

The risks associated with offshore explorations are large as well. The nominal success ratio for offshore exploratory wells is 20 percent. At the end of 1973, 40 percent of the tracts sold in 1970 had proved to be successful in the sense of having established commercial production. The success ratio for development wells[17] is in the neighborhood of 80 percent. These success ratios may understate the risks associated with offshore drilling. An exploratory well may be successful in the sense that it yields petroleum, yet not yield sufficient petroleum to earn ex post non-negative economic profits.[18] In addition, the distribution of

[10] Not all OCS auctions are for petroleum rights. There have been two OCS sales of tracts for sulphur rights and two for salt rights. In this paper we concentrate on OCS petroleum auctions. A limited number of tracts have recently been auctioned on a variable royalty basis.

[11] If an eligible independent refiner nominates to the U.S. Geological Service for the royalty oil, the government may elect to take the royalty in kind. Under this arrangement, the independent refiner receives title to the oil and pays the government the cash royalty. The independent refiner however, must run in his refinery the OCS oil or an equivalent volume of oil received under an exchange arrangement for the OCS oil.

[12] Bureau of Land Management (5). The EXXON group includes Mobil and Champlin. The initial exploratory wells drilled on the six tract contiguous package were dry holes and were plugged and abandoned.

[13] For a discussion of the institutional complexities of petroleum exploration, see McKie (20).

[14] These four conditions are discussed in more detail by Mead (21).

[15] Bureau of Land Management (5). In the second half of 1973, the Arab oil embargo resulted in dramatic changes in output prices. Factors prices have also recently increased substantially as a result of the dramatic increase in demand for inputs and the shortages of certain items which were a legacy of wage and price controls. The policy environment has also changed. Our specific analysis and numerical examples generally cover the period 1954 through June 19, 1973, but we believe that our conclusions concerning the underlying structure, behavior and performance of the industry are also relevant on a prospective basis.

[16] This estimate is in 1973 dollars at 1973 factor prices and is based on an updating of the cost data presented in Weaver, Pierce and Jarik (39).

[17] Development wells are potentially production wells drilled following completion of a successful exploratory or wildcat well.

[18] Under conditions of uncertainty, it is important to distinguish between ex ante and ex post economic profits. Exploration will be conducted so long as the expected value of the exploration campaign is non-negative. Once a tract is drilled, it may still be produced even if ex post economic profits are negative. Sunk geophysical, bonus and exploratory test costs are irrelevant to producing decisions once a tract is judged to contain sufficient reserves to justify development. Joint ventures may bring firms into the market that might not be willing to enter the market independently. In the absence of joint ventures, small firms may not be able to accumulate the necessary capital for bonus payments and a successful exploratory campaign. Even if small firms are able to meet these minimum capital requirements, they risk "gamblers ruin" if they can only submit solo bids on a few tracts. The ability of these firms to enter joint ventures reduces the risk they face and may cause them to enter OCS lease auctions they would not be willing to enter if only solo bids were permitted.

petroleum discoveries is skewed. There are relatively few large or giant discoveries and a large number of smaller pools.

The potential for economic waste and spill-over effects is also present in offshore exploration. For example, cost savings can result from joint seismic operations such as those conducted in Bristol Bay, Alaska, even though the firms financing the joint seismic operations may then bid in separate groupings. Examples of external economies might include expensive research in in-situ retorting of oil shale involving nuclear fracturing which produces non-patentable processes and information that quickly becomes public property.[19] In the case of drainage sales of OCS tracts, firms owning production on two nearby tracts may form a joint venture to bid on an adjacent tract. In order to facilitate unitized operation of a common reservoir underlying portions of all three tracts.[20] Joint ventures also arise when they are an efficient means of combining complementary talents.[21]

Various aspects of the rationale for joint ventures may apply to many industrial situations outside of petroleum exploration. In the specific case of offshore exploration, the fact that numerous tracts are offered for bids simultaneously is an additional reason for the emergence of joint ventures in the OCS lease auction market. In any one lease sale, from 50 to more than 100 tracts may be offered for bids. Joint ventures facilitate competition if they are risk-sharing arrangements. The ability to spread the same amount of exploratory capital over several tracts reduces the variability in both the number of drilling sites won by individual firms and the amount of petroleum actually discovered by the firm. For a given number of tracts and firms, joint venturing may increase the number of bids per tract. Moreover, joint venturing also increases the number of firms participating in offshore exploration. Reduced variance lowers the opportunity cost of committing capital to petroleum exploration and increases the number of firms (especially small firms) that are able to enter the industry. Joint ventures reduce any barriers to entry that large capital requirements and high risk may have imposed on small firms.[22]

The same incentives which exist in a competitive market to joint venture in order to spread risks or otherwise minimize costs also exist in collusive situations. The essential question to be answered in the policy analysis of joint ventures regards the pro or anti-competitive effects of joint ventures. In what follows we argue that, on the basis of twenty years of OCS leasing experience, the anti-competitive or collusive model of joint ventures can be uniformly rejected.

EMPIRICAL TESTS OF THE ANTI-COMPETITIVE MODEL OF JOINT BIDDING BEHAVIOR

The competitive or anti-competitive effects of joint bidding in OCS lease sales cannot be analyzed without reference to the structure and performance of the petroleum industry as a whole. Straightforward analysis of conventional concentration ratios for the petroleum industry as a whole would not indicate a high degree of monopoly power or a high probability of collusion. In 1968, the four firm concentration ratio for crude oil production was 31 percent and the eight firm concentration ratio was 51 percent.[23] By standard industrial organization criteria, these concentration ratios are not large.[24]

This structural data is consistent with observed performance data concerning the petroleum industry. The increase in suburbanization over the period from 1955 to the middle of 1973 probably changed the structure of gasoline demand. It is likely that the demand for gasoline became relatively more inelastic. Over the same period, real per capita incomes increased. Higher real per capita incomes probably also contributed to a decrease in the elasticity of demand. The

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[19] These examples of cost savings and internalization of spill-over effects are taken from Mead (*21*).

[20] If an oil pool covers more than one tract, joint development is the most efficient means of production. Independent development could lead to external effects. This problem is resolved offshore via unitization of oil pools. Unitization of reservoirs could be one of the principal functions of conservation regulation, but this has often not been the case onshore under state controls. See McDonald (*19*).

[21] Differing risk preferences are a case in point. See McKie (*20*).

[22] This applies to onshore as well as offshore activity. Entry and general structural conditions in petroleum exploration and production are discussed by Hawkins (*13*), McKie (*20*) and Ture (*31*).

[23] FTC (*11*).

[24] Concentration in the petroleum industry is actually less than in all manufacturing. The concentration ratios listed above are below "critical" concentration ratios in standard texts such as Bain (*3*) or Kaysen and Turner (*15*).

profit maximizing response of a cartel or closeknit oligopoly to a decrease in the elasticity of demand is to raise prices. Over the period prior to the Arab oil embargo, both the real price of gasoline and real refining margins fell. Such decreases are the response of a competitive rather than a "cooperative" industry.[25]

Previous studies of joint ventures in petroleum

Available data from previous studies of specific OCS lease sales are also inconsistent with the collusive or anti-competitive model of joint ventures. Markham (*18*) tested four hypotheses concerning joint ventures using data from the 1967 and 1968 lease sales. The hypotheses tested by Markham were: (1) Joint bidding reduces the number of bidders and thus reduces average bid price; (2) joint bidding affects the size distribution of firms participating in the bidding and consequently affects concentration by raising the level of concentration in the domestic petroleum industry generally; (3) joint bidding increases the total revenues the government receives from the leasing of offshore oil tracts; and (4) joint bidding affected the rate of return the industry has earned on offshore oil operations.

Using data from individual tracts as units of observation, Markham found a positive, but statistically insignificant, relationship between the number of bids submitted by joint ventures and the number of solo bids. Markham concluded from these regression studies that joint bids do not act as a substitute for solo bids and that joint bidding is not anti-competitive and found: (1) The incidence of joint bidding was inversely related to firm size in the 1967 and 1968 lease sales; (2) the total realization by the government from the 1967 and 1968 lease sales was actually greater than the expected realization assuming no joint bids; and (3) the rate of return from investment in tracts leased from 1954 and 1955 lease sales was less than 7.5 percent before taxes. Markham concluded that joint ventures probably increased rather than reduced competition in the OCS auction market.

Mead (*21*), using data from 1959 through 1966 Alaskan and Gulf of Mexico lease sales found what he interpreted to be some anti-competitive aspects of joint ventures. Within a given geographic area, firms involved in joint bidding arrangements initially tended not to bid against their former partners in subsequent lease sales, but as the time span lengthened firms tended to bid against former partners. In addition, joint bidding in one geographic area did not affect whether or not firms bid against each other in another geographic area. Mead concluded that while some anti-competitive effects were present, these effects tended to become insignificant as either the time horizon or the geographic scope of the market was widened. Mead's policy recommendations were that merger guidelines be applied to joint ventures.[26]

ANALYSIS OF THE 1954–73 JOINT BIDDING EXPERIENCE

The collusive or anti-competitive model of joint ventures can be tested empirically.[27] It will be recalled that the collusive model implies an inverse relationship between joint ventures and the number of bidders, stable market shares in OCS tracts won, a positive relationship between firm size and participation in joint ventures, few joint ventures between small and large firms and the possibility of identical bids by different firms. The bidding behavior data indicate that the increased incidence of joint ventures over time has been characterized by the entry of new firms and that joint ventures have facilitated this entry.[28]

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[25] For more on the collusive *vs.* competitive model of the industry as a whole, see Erickson, Millsap and Spann (*9*) or Erickson and Spann (*10*).

[26] In a subsequent analysis, Mead (*22*) argues that, " . . . [O]n the basis of limited information the evidence leads one to conclude that joint biddings for outer continental shelf oil and gas leases pose no threat to competition. The evidence further supports the conclusion that competition is substantially increased when smaller firms join together to submit joint bids." Mead however, goes on to conclude, "Firms having assets of $5 billion or more might be prohibited from joining together in order to bid for federal oil and gas leases."

[27] The rationale for each of these tests is described in more detail below.

[28] The entire 1954–1973 bidding experience is especially relevant to current allegations of collusion in the petroleum market. Our analysis and tests of the collusive or anti-competitive model of joint ventures differs from that of Markham (*18*) or Mead (*21*) in four important aspects. We analyze a twenty year period of OCS leasing rather than concentrating on one or two lease sales. We attempt to compare the pro *vs.* anti-competitive effects of joint ventures in more recent years *vs.* their effects during the entire 1954–73 period. A number of hypotheses not tested by Markham or Mead are included here. Finally, we provide some estimates of the effects of applying merger guidelines to joint ventures (as recommended by Mead).

Joint bidding and the number of bidders

One possible anti-competitive effect of joint ventures would be the substitution of joint bids for solo bids. If this occurred, joint ventures would reduce the number of bidders in the market, which might be judged anti-competitive.[29]

In Table 1, the number of tracts bid on, the number of bidders and average number of bids per tract are listed by year for each federal OCS lease sale for the period from 1954 through June 19, 1973. In 1954 when only 10 percent of bids submitted were joint bids, the average number of bidders per tract was 3.59. In 1972 and 1973, when almost 85 percent of all bids submitted were submitted by joint ventures, the average number of bidders per tract was in excess of five. For all lease sales combined, the average number of bidders per tract was 3.56. For the years 1969–1973, the average number o fbidders per tract was 5.28. Thus the increased incidence of joint ventures over time have definitely not reduced the number of bids submitted in OCS lease sales. Joint ventures appear to have actually increased the number of bidders and the degree of competitiveness in OCS lease sales.

Similar results are obtained when the frequency distribution of bids per tract is examined. Table 2 contains data on the distribution of bids per tract for the years 1954–1973. For the entire period, 30.6 percent of all tracts had only one bidder and there were three or more bids per tract on 56.9 percent of all tracts which received at least one bid.[30] During the period 1969–1973, only 17.9 percent of all tracts had only one bidder. Almost 70 percent of all tracts had three or more bidders during this period.[31] Again, this is evidence that the increased use of joint ventures over time as a bidding device appears to have in creased rather than decreased competition in OCS lease sales. Not only has the average number of bids per tract been higher in recent years, but the fraction of tracts for which there were only one or two bidders has been reduced.

The data presented in this section are clearly inconsistent with the hypothesis that joint ventures in OCS lease sales have had anti-competitive effects. The increase in joint ventures in recent years had led to an increase in the average number of bidders per tract and a reduction in the number of tracts which received only one or two bids. In addition, joint ventures appear to have brought firms into the market which might not have entered OCS lease auctions had only solo bids been allowed.

Joint ventures, collusion, and market sharing

Although it can be alleged that, ". . . [T]he variety of collusive pricing arrangements in industry is limited only by the bounds of human ingenuity." [32] a collusive arrangement requires some implementation mechanism. A particularly popular form of collusive arrangement is some form of fixed market shares.[33] In the electrical equipment conspiracy (*35*), each seller was assigned

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[29] Markham's (*18*) analysis of individual tracts in the 1967 and 1968 lease sales indicated that, based on individual tracts, joint bids did not appear to be replacing solo bids. In addition to examining individual lease sales for a limited period, one must also determine whether or not the increased incidence of joint bidding over time has increased or decreased the number of bidders in OCS lease sales.

[30] These tabluations for numbers of bidders are ex post in the sense that all firms or joint venture groups of firms which were known (through ordinary industry reconnaissance) to have been interested in a particular tract may not have submitted a bid on that tract. Nevertheless, the prudent bidder who did bid upon the tract, in his ex ante calculations of what bid would be sufficient to be a minimum winning bid, would necessarily consider the potential competition from firms or groups of firms which subsequently did not actually bid on the tract in question. To the extent that the OCS auction market represents competition for the field (see Demsetz (7)), our number of bidders tabulations understate this competition. The typical dispersion between first and second place bids suggests both the uncertainties inherent in evaluating offshore acreage and that potential competition for the field is effective.

[31] The 1963 lease sale appears to be an outlier. This is because it contains data from an early California lease sale. In 1968, after the industry had the benefit of some experience with the reserves potential and operating conditions in the California offshore area, the number of bidders and the number of bidders per tract went up to the long-run trend level. Exploration managers have referred to offshore activity in the 1950's and 1960's as fighting a 1920's war with 1950's weapons. But this observation holds for a given area only after some experience is on the record and in the public domain. Behavior evidencing initial caution and subsequent imitation similar to the experience in the 1963 and 1968 California lease sales characterized the trend toward drilling deeper onshore horizons. See Erickson (8).

[32] Scherer (27), p. 158.

[33] "Fixing market shares is probably the most efficient of all methods of combatting secret price reduction . . . (in a cartel or other collusive arrangement)" Stigler (29). Some prominent antitrust cases in which fixed market shares were observed or alleged to be part of a collusive agreement included *U.S.* v. *Addyston Pipe and Steel Company* (32), *American Tobacco Company* v. *U.S.* (*1*), and *U.S.* v. *Armour and Company* (33), and *U.S.* v. *Westinghouse Electric Corp. et al.* (37).

TABLE 1.—NUMBER OF BIDDERS PER TRACT IN FEDERAL OCS OIL AND GAS LEASE SALES

Year	Number of tracts receiving bids	Number of bidders	Number of bidders per tract
1954	116	417	3.59
1955	121	381	3.17
1959	51	56	[1] 1.10
1960	173	444	2.55
1962	436	1,230	2.82
1963	58	70	[2] 1.20
1964	124	291	[3] 2.34
1966	51	150	2.94
1967	173	743	4.29
1968	237	758	[4] 3.19
1969	80	141	1.76
1970	148	1,102	7.44
1971	13	33	2.53
1972	193	1,014	5.25
1973	104	551	5.30
Overall	2,077	7,046	3.56
1969 to 1973	538	2,841	5.28

Single bid tracts were mainly off the Florida coast. For Louisiana tracts, the average number of bidders per tract was 2
California lease sale.
[3] Includes Oregon and Washington OCS leases.
[4] Includes some California OCS lease sales.

TABLE 2.—FREQUENCY DISTRIBUTION OF BIDS PER TRACT[1]

Year	Percentage of tracts with 1 bidder	Percentage of tracts with 2 bidders	Percentage of tracts with 3 or more bidders
1954	32.1	11.0	56.9
1955	41.3	18.2	40.5
1959	69.0	12.0	[2] 19.0
1960	32.0	26.5	41.5
1962	32.0	27.6	40.4
1963	80.7	17.6	[2] 1.7
1964	27.4	31.2	[2] 41.1
1966	23.8	14.3	61.9
1967	15.8	24.1	60.1
1968	29.4	21.4	[2] 49.2
1969	52.8	25.0	22.2
1970	18.2	36.4	88.9
1971	18.2	36.4	45.4
1972	15.7	12.5	71.8
1973	26.9	12.6	60.5
Overall	30.6	19.1	50.3
1969 to 1973	17.9	12.7	69.4

[1] Only tracts for which at least 1 bid was tendered and accepted are included.
[2] See the notes to table 1.

a specified share of the market. General Electric's share was set at 40.3 percent in late 1958 and Allis Chalmers at 8.8 percent. Bids were arranged in advance so that each firm was low bidder in just enough sales to obtain his predetermined market share.[34] In the second tobacco case [1] evidence of fixed market sharing in tobacco leaf auctions was presented.[35]

To the extent that joint ventures (particularly among the major petroleum producers) have been used as a method to subvert competition, one might expect to observe some form of market sharing arrangement in OCS lease sales. Much the same as major tobacco producers are alleged to have attempted to utilize predetermined market shares to exert monopsonistic power over the tobacco farmer, one might expect alleged anti-competitive bidding behavior in the OCS lease market to take the form of some type of market sharing arrangement to

[34] Scherer (*25*), p. 160.

[35] For more on this case, see Nicholls (*24*) or Tennant (*30*). In the tobacco case, Nicholls (*24*) found that actual market shares in leaf purchases not only deviated from planned shares but exhibited some instability over time. In another instance in the livestock market (*U.S.* v. *Armour and Company* (*33*), Nicholls (*23*) did observe considerable stability in market shares over time.

exert monopsonistic power over the U.S. Government and lower bid prices per acre in OCS lease sales.

If major petroleum firms do attempt to use joint ventures as a method to regulate market shares in the OCS auctions, the presence or absence of such anti-competitive bidding behavior should be reflected in the stability or instability of market shares over time among individual lease sales.[36]

Since a large number of OCS tracts are leased in each lease sale (see Table 1), a fairly simple form of collusion would be for majors[37] or combines which included some majors to each agree on a predetermined market share in each lease sale. Given the difficulties inherent in negotiating and renegotiating collusive agreements, one would expect the same market shares to be agreed upon for a series of lease sales.[38]

Table 3 lists the percentage of bonus dollars paid in successful bids by the largest, top four, and top eight firms (including the total bonus payment of any joint ventures involving these firms) as a fraction of total bonus payments in successful bids in three recent least sales.[39] Inspection of Table 3 indicates considerable instability in market shares in OCS lease sales.

The share of the largest buyer and affiliates fluctuates between 13.8 and 42.8 percent. The share of the top four buyers varies from 48.5 to 85.6 percent. Only when one examines the share of the top eight does there appear to be any stability in market shares. The market share of the eight largest buyers and affiliates ranges from 81.6 to 96.0 percent.

The composition of the eight largest buyers, however, changed considerably between these three lease sales. When the three lease sales are combined, the share of the top eight buyers and affiliates is 69.9 percent, or more than 10 percent below the share of the top eight buyers in any individual lease sale. This indicates substantial turnover among the largest bidders within a relatively short period of time. When the market shares of the largest and top four buyers and affiliates are examined, a similar result emerges. The market shares determined by combining all three lease sales are lower than the equivalent market shares for individual lease sales. This indicates that not only are the market shares of the leading firms unstable over time, but that the composition of the leading firms is changing over time. This type of instability is not consistent with anti-competitive bidding behavior via joint ventures in the OCS auction market.[40]

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[36] Stability or instability of market shares may not only be an indicator of the existence of collusion, but it is also likely that market share stability is a key to the actual success or failure of such arrangements. A problem common to all cartels and other such collusive agreements or actions is the incentive each individual firm faces to cheat on the agreement. As Stigler (*29*) argues, one of the methods by which a firm in a cartel can determine whether or not other cartel members are cheating is by examining changes in this market share or fraction of customers obtained. If a firm observes sudden changes in its market share, it is likely to infer cheating on the part of others. If a firm in a cartel infers cheating on the part of others, it is likely to cheat on the agreement in retaliation. Such cheating leads to breakdown of the cartel.

[37] Majors are here arbitrarily defined to be the eight largest petroleum companies. They are Exxon, Texaco, Gulf, Shell, Standard of California, ARCO, Standard of Indiana, and Mobil. This is consistent with the definition used in the FTC report (*11*) and is adopted here for only that reason. A functional definition of majors would expand the number of firms so designated to include twenty-odd companies and more accurately capture the status of firms such as Phillips, Union, Sun, etc.

[38] For a discussion of the problem involved in negotiating and renegotiating collusive agreements, see Voight (*33*) or Scherer (*27*), pp. 159–162, or Phillips (*26*), pp. 183–193.

[39] The data in Table 3 should not be considered as concentration ratios. The market shares in Table 3 include the total amount of bonus dollars paid by joint ventures if one of the eight largest buyers in that sale is in the joint ventures; not merely that producer's pro rata share of the joint venture. Thus the market share data in Table 3 considerably overestimate concentration in the OCS market. The largest's eight firms, in terms of bonus dollars paid, vary in identity from sale to sale. Moreover, the eight firms which happen to pay the largest dollar amounts of bonus in any particular lease sale should not be confused with the eight firms designated as majors in the FTC report.

[40] This type of year to year instability might be consistent with collusion via joint ventures if market shares were defined in terms of time horizons that are measured in decades. The problem with such a definition is that any number of other factors change over such a period of time. Examples are the initiation of regulation of the wellhead price of natural gas, the severity and administrative details of market demand prorationing, import, controls, tax treatment and the depletion allowance, to technology and real costs, potential deregulation of the wellhead price of natural gas, etc. Such changes would severely complicate the problem of defining equitable intertemporal market shares and thus contribute to instability.

TABLE 3.—MARKET SHARES OF THE LARGEST BUYERS IN RECENT OCS LEASE SALES

Date of lease sale	Largest buyer	Top 4	Top 8
Dec. 15, 1970	16.2	53.7	82.9
Sept. 12, 1972	42.8	85.6	96.0
Dec. 19, 1972	13.8	48.5	81.6
All 3 sales combined	14.9	42.8	69.9

Note.—Ratios calculated on the basis of bonus dollars paid by largest buyers, 4 or 8 largest buyers, as a percentage of total bonus bids. When 1 of the 8 largest buyers participates in a joint venture, the total bid of the joint venture, not the large buyer's pro rata share, is used to compute market share.

Source: Wilson [40], p. 21.

Firm size and the incidence of joint ventures

If joint ventures are risk-sharing arrangements which result from the efficient allocation of risks in a competitive market, one would expect the incidence of joint ventures to increase as firm size decreases. Such a spreading of exposure or exploratory capital reduces the variance of the number of tracts actually won and the variance in the amount of petroleum discovered given the net amount of tracts actually owned by the firm.

Large firms are either bidding on a large number of tracts in any one lease sale or already own a number of tracts. Therefore the marginal reduction in risk to a large firm attributable to engaging in a joint venture is relatively less than for a smaller firm.

Smaller firms which own fewer tracts and, in the absence of joint ventures would be bidding on fewer tracts, receive a larger reduction in risk due to entering joint ventures. Given that joint ventures are not costless to organize, one would expect those firms that receive the greatest benefits (as measured by reductions in risk) to be those most likely to enter joint ventures. This implies that firm size and the incidence of joint ventures should be inversely correlated.

The collusive model of joint ventures among large firms may be used as a reference point with respect to allegations about the methods of collusion. Two allegations are of particular interest here. One is that firms engaged in joint ventures have a means of holding down bid prices to earn supranormal profits to offshore exploration. The second is the argument that large firms use OCS joint ventures as a method of meeting together to agree on secondary collusive or restrictive arrangements.[41] This second contention lacks plausibility on the principle of Occam's razor, but both allegations have common testable implications.

If joint ventures are collusive in either of these two senses, one would expect large firms to enter joint ventures relatively frequently. Thus firm size and the number of joint ventures might be independent or positively correlated.

The hypothesis that majors are more or less likely to submit joint bids can be tested in a number of ways. One test would be to examine the percentage of all bids which are jointly submitted bids as a function of firm size.[42] An alternative test of the hypothesis that joint bidding is inversely related to firm size is to examine winning bids for tracts actually won. While total bids submitted are relevant to testing one aspect of the general bidding behavior hypothesis, it is winning bids which allow control over production and which lead to joint *vs* solo operation of tracts.

The question is whether majors are more likely than non-majors to participate in winning joint bidding ventures. There are two problems with the classification system necessary for addressing this question. First ,the unit of observa-

[41] An examination of joint ventures among the 100 largest manufacturing firms reveals substantial subsidiary joint venturing by divisions of parent firms which are frequently direct competitors. See Boyle (*4*). Bidding rules recently adopted by the Department of Interior prohibit firms with certain characteristics from joining bidding ventures with each other. The coverage of these rules have not yet been firmly established as of this writing, but it is clear that their intent is to prevent any two of the majors from bidding together, and may actually cover as many as ten or more firms.

[42] Such as analysis was conducted by Markham (*18*) for the 1967 and 1968 lease sales. Markham found that the incidence of jointly submitted bids was inversely related to firm size as measured by total assets.

tion may be either tracts or firms. Second, regardless of the unit of observation chosen, an element of double-counting enters the calculation. Using tracts as the unit of observation involves double-counting in the cases of joint ventures which involve both majors and non-majors.[43] When firms are used as the unit of observation, even were there no joint ventures which involved both majors and non-majors bidding together, joint ventures cause the number of winning firms to exceed the number of tracts won. Nevertheless, using firms as the unit of observation provides a concise method of summarizing the data on the tendencies to bid jointly by type of firm.

Table 4 is constructed on the basis of a classification system such that a four firm combine consisting of two majors and two non-majors submitting a winning bid would be counted as two joint bids by majors and two joint bids by non-majors. A two firm winning joint bid by non-majors would be counted as two joint bids by non-majors, and so on.[44] For the entire period 1954–1973, and for the 1972 and 1973 lease sales, the percentage of jointly submitted bids on tracts won is higher for non-majors than for majors.[45] The likelihood of submitting winning joint bids appears inversely related to firm size.

The composition of joint ventures

If the majors are using joint ventures in offshore bidding as a means of meeting to arrange secondary collusions, there is no reason why small firms would be desired at such meetings. If joint ventures do reduce barriers to small firms entering the offshore exploratory market, large firms can partially deny entry to small firms by refusing to participate in joint ventures with small firms. These considerations suggest that if joint ventures in offshore lease sales are a mechanism to support anti-competitive behavior in either OCS auctions or other markets, then the composition of such joint ventures would tend to fall into two dichotomous categories: those consisting solely of non-majors and those consisting solely of majors.

TABLE 4.—DISTRIBUTION OF WINNING BIDS USING FIRMS AS UNITS OF OBSERVATION

	Majors			Nonmajors		
Lease sales	Solo winning bids	Joint winning bids	Percentage of winning bids in joint ventures	Solo winning bids	Joint winning bids	Percentage of winning bids in joint ventures
1954 to 1973	577	839	59.2	544	1,103	68.6
1972	25	120	82.7	38	293	91.2
1973	7	25	78.1	4	358	98.8

[43] Tracts which are won may have been successfully bid upon by one of the following five categories of bidders: (1) solo bids by majors; (2) solo bids by non-majors; (3) joint bids which consist solely of majors; (4) joint bids which consist solely of non-majors; and (5) joint bids which involve both major and non-major firms. In order to construct a two-by-two contingency table, one needs the total numbers of tracts won by joint and solo bids by majors and non-majors. The total number of tracts won by joint bids by majors may be defined to be the number of winning joint bids which consisted solely of majors plus the number of winning joint bids which involved majors and non-majors together. If a consistent definition for tracts won by joint bids by non-majors is adopted, tracts which were won by joint bids which involve both majors and non-majors bidding together are included in the cells for joint ventures for both majors and non-majors.

[44] When there are any joint bids at all, this procedure will result in the number of winning firms exceeding the number of tracts won. For example, the number of tracts won in the 1973 lease sale was 104 (Table 1), but the number of firms involved in winning bids was 394 (joint plus solo winning bids for majors and non-majors from Table 4). Even when tracts are used as the unit of observation, tracts counted as won exceed tracts actually won because a winning bid by a four firm joint venture venture between two majors and two non-majors is classified as both one joint venture tract won by majors and one joint venture tract won by non-majors.

[45] Although the double-counting problem results in the violation of the assumptions which underlie a contingency table, Chi-square statistics based upon the tract and firm classification systems are a convenient method of summarizing the data. Six basic Chi-square tests were performed: one each for 1954–1973, 1972 and 1973 for the two classification systems. All three Chi-square statistics for Table 4 were significant at the .01 level. Using tracts as the unit of observation, in all but the 1972 lease sales one would reject the hypothesis that majors and non-majors were equally likely to participate in the winning of a tract as part of a joint venture. In five of six cases the hypothesis of an equal propensity to submit winning joint bids is rejected with a high degree of confidence.

In Table 5, the data on the type of joint ventures which actually win tracts are classified into three categories: joint ventures which contain no majors, joint ventures which contain only majors, and joint ventures which involve both majors and non-majors. For the entire period 1954–1973, and for both the 1972 and 1973 lease sales, the percentage of joint ventures which involve both majors and non-majors greatly exceeds the percentage of joint ventures which consist solely of majors. This implies that if a major is involved in a joint venture, that venture is much more likely to involve at least some non-majors than to consist solely of majors.

This pattern of composition of joint bidding ventures is not consistent with self-interest in a situation in which majors are using joint ventures as a means of collusion in either OCS auctions or other markets. For such alleged cooperative or joint activity to be successful exercise of monopsony power, it is essential that non-major firms be excluded from offshore activity. If joint ventures among major producers were being used to facilitate secondary arrangements, the probability of successfully consumating and implementing such arrangements is reduced by including extraneous firms in the meetings.

During 1972 and 1973, the percentage of joint ventures which consists solely of non-majors was much higher than it was for the entire period 1954–1973. This trend towards a larger fraction of joint ventures consisting of non-majors alone, along with the fact that the number of bidders per tract was increasing over time, indicates that joint ventures have facilitated entry and reduced risk, particularly among the non-major producers.[46]

TABLE 5.—THE COMPOSITION OF JOINT VENTURES WHICH SUBMITTED WINNING BIDS

Lease sales	Percentage of winning groups which contain no majors as members	Percentage of winning groups which contain only majors as members	Percentage of winning groups which contain both major and non-majors as members
1954 to 1973 inclusive	38.0	12.0	50.0
1972	64.3	7.0	28.7
1973	79.6	0	20.4

Identical bids

Identical bids in sealed bid auctions on the part of supposedly competing firms or groups of firms are frequently taken as evidence of collusion. In the second tobacco case (*1*), the identical bid prices for leaf tobacco by major firms were alleged to be circumstantial evidence of collusion. In the Salk Vaccine case (*34*) identical sealed bids were alleged by the Justice Department to be evidence of "a continuing agreement, understanding, plan and concert of action" to "submit uniform price quotations." In the tetracycline case (*36*), indentical bids of $19.1884 per bottle to the Veterans Administration by all producers were alleged to be circumstantial evidence of collusion.[47]

If joint ventures in offshore lease sales were the facilitating mechanism for anti-competitive bidding behavior, one might expect to observe identical bids submitted by various groups on OCS tracts.[48]

[46] Table 4 illustrates that majors are much more apt than non-majors to bid alone, although there has been a trend toward joint venturing for both majors and non-majors. Such a pattern could be the result of two factors. First, the greater absolute size of each major alone relative to development of a single tract would tend to decrease the risk of gamblers' ruin. Second, greater experience among majors with offshore activity has probably decreased the uncertainty associated with such ventures. However, the greater tendency for majors to bid alone is not inconsistent with an overall trend toward an increased incidence over time of joint venturing in bidding groups. An increase in the incidence over time of joint venturing is consistent with both (1) entry of relatively smaller firms and their preference for this mode of bidding and (2) generally increased reliance upon joint bidding by all categories of firms in order to reduce the variance associated with participation in offshore exploration and development.

[47] The government also produced evidence that identical sealed bids were submitted to state and local hospitals as well.

[48] It should be noted that identical bids are not necessary in order to maintain a collusion. An alternative form of collusive bidding would be for firms to agree in advance as to which firm or group of firms would win which tracts. Then bids could be "rigged" so that each firm won enough tracts to meet its predetermined market share. It was argued earlier that this type of collusive arrangements would predict a high degree of stability of market shares of OCS tracts won. The data indicated that this has not been the case.

There is considerable dispersion in OCS lease sale bids. In some cases the winning bid is five or more times the second place bid. In the June 19, 1973, lease sale, 76 tracts received at least two bids. There were only seven tracts, or less than ten percent of the number of tracts leased, in which the first and second place bid were within ten percent of each other.[49]

If majors were using joint ventures to facilitate anti-competitive bidding behavior in OCS lease sales, one might also expect these seven tracts with approximately equal bids to be tracts in which both the first and second place bids were submitted by majors or combines which consisted of at least some majors. The exact opposite is true. In no case when first and second place bids were within ten percent of each other, were major producers parties (either alone or as part of a combine) in both the first and second place bids. In all cases, either the first or second place bid (and in some cases both) were submitted by a combine which contained no major producers.

Identical bids are not necessary for a collusive agreement. However, to the extent that identical bids do indicate anti-competitive bidding behavior, such evidence is not present in OCS lease sales.

JOINT VENTURES IN OCS LEASE SALES AS MERGERS

In the previous sections, we evaluated the empirical implications of a collusively restrictive model of joint ventures in OCS lease sales. That model was rejected in all cases. For purposes or argument, an alternative normative approach to analyzing joint ventures is to treat joint ventures as if they were outright mergers. In the Penn-Olin case (*35*), the Supreme Court stated that the same criteria which should be applied to mergers should be applied to joint ventures. What types of mergers in terms of acquiring and acquired firms, their sizes, market positions, etc., are in fact competitive or anti-competitive is beyond the scope of this paper. In 1968, however, the Justice Department adopted a set of merger guidelines.

These guidelines indicated that the Justice Department would challenge any merger in which the acquiring and acquired firms each had five percent or more of the relevant market. This is not the only criterion enunciated in the Justice Department guidelines. It is the criterion most relevant to the petroleum market in which all but one of the largest eight firms hold between five and ten percent of the market as measured by net crude oil production. These guidelines indicate that if joint bidding ventures in OCS lease sales were treated as outright mergers, the Justice Department would challenge any joint bidding venture which involved two or more of the eight largest petroleum producers (the FTC majors).[50]

This historical data indicate that application of such a rule of thumb to offshore joint ventures would not have had dramatic effects on the results of OCS lease auctions. During the entire period 1954–1973, only 271 of a total of 776 joint ventures which won tracts, or 34.9 percent, included at least one major. Of the 776 successful joint venture bidding groups, only 123, or 15.8 percent of total joint ventures, included two or more majors. Although 123 or 45.5 percent of the 271 successful 1954–1973 joint ventures which contained at least one major contained two or more majors, there is evidence that this percentage has been decreasing. In the 1972 lease sales, only 22.8 percent of the successful joint ventures which included at least one major contained two or more majors. In the June 1973 lease sale, 31.5 percent of the successful joint ventures which contained at least one major contained two or more majors. Thus, as non-majors have entered offshore exploration through joint ventures with and without majors, majors have in turn entered into joint ventures of increasingly heterogeneous composition.

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[49] No tracts were observed with identical first and second place bids. Ten percent is used as an arbitrary measure of approximately equal bids. See McKie (*20*) for an indication of the bid dispersion in earlier lease sales.

[50] According to the FTC (*11*), Table 11–1, p. 13, only seven of the eight majors had a share of 1969 domestic net crude production in excess of five percent. Mobil had a share of 3.94 percent. In addition, the ARCO share of 5.11 percent included some foreign (mostly Canadian) production. Nevertheless, for the purposes at hand, we will consider all eight majors to satisfy the most stringent Justice Department merger guideline. The restrictions on the composition of bidding groups adopted by the Department of Interior may be viewed as an application of the Justice Department merger guidelines. See the Oil and Gas Journal (*25*).

Of the 123 successful 1954–1973 joint ventures which included two or more majors, 32, or 26 percent, included at least one non-major. During the 1972 lease sale, 11.6 percent of the successful joint ventures were combines which included two or more majors. Almost half of these combines included at least one non-major. In the June 1973 lease sale, only 6.4 percent of the successful joint ventures contained two or more majors. All of these successful joint ventures included at least one non-major.[51]

If joint ventures were treated as outright mergers, the fraction of all joint ventures which have been joint ventures containing two or more majors and which we have assumed would have been arbitrarily deemed anti-competitive or challenged by Justice Department guidelines was never large and has been declining. Within the smaller universe of successful joint ventures which involved at least one major, only one-quarter to one-third of those joint ventures would have violated the Justice Department merger guidelines. Such a situation is certainly not consistent with arguments that the results of joint bidding combines in OCS lease sales have had severe anti-competitive impacts on the petroleum industry, nor with the record which indicates that joint ventures are pro-competitive due to their entry facilitating effects, nor with the other data available concerning offshore bidding and operations.

SUMMARY AND CONCLUSIONS

In the evaluation of the performance of an industry, two of the basic questions involve structure and behavior. Are the number and size distributions of firms themselves alone consistent with enough firms to yield a competitive result? Given a sufficient number and an adequate size distribution of firms, are there any behavioral idiosyncracies in the industry which cast doubt upon the achievement of a competitive result?

When structure is considered alone, the U.S. petroleum industry is one of the least concentrated of U.S. industries. There is also long-run evidence from the expansion of capacity, the behavior of price-cost margins, and the adoption of new technology which is consistent with good performance. Unless they stem solely from a primordial populist reaction to big firms in a big industry, the perennial antitrust concerns regarding the U.S. petroleum industry must then be principally behavioral in origin.

The firms in the petroleum industry engage in a number of joint activities, including joint ventures to bid for and develop offshore OCS leases. We have examined the record of the sealed bid auction market for offshore OCS lease sales from 1954 through mid-1973. We compared the patterns of bidding behavior and the composition of joint ventures with those which can reasonably be expected to have prevailed were the practice of forming joint ventures for offshore lease sales an example of collusive or anti-competitive behavior. The implications of such behavior are that joint ventures would be substituted for solo bids, that joint ventures would lead to stable market shares of OCS tracts won, that the incidence of joint ventures would be positively correlated with firm size, that majors and non-majors would not enter joint ventures together, and that identical bids might be observed.

The facts are uniformly inconsistent with these implications. As the risks and uncertainties associated with offshore exploration became more widely understood, an increased incidence of joint ventures was associated with an increase in the total number of bidders, an increased number of bidders per tract, and a decrease in the relative number of tracts which receive only one bid. For smaller firms, by decreasing the variance associated with expending a given exploration budget, joint ventures decrease the chance of gambler's ruin in offshore exploration.

Majors have been much more likely to enter joint ventures which contained no other majors rather than joint ventures which contained two or more majors. Therefore, even if one applied stringent U.S. Justice Department merger guidelines to joint ventures and treated those joint ventures as outright mergers, the fraction of successful joint ventures which would have been challenged under those guidelines is small.

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[51] These calculations are based on a detailed tabulation of successful joint ventures using published Bureau of Land Management data (*5*).

Joint ventures, including joint ventures among major and non-major firms, have facilitated entry into offshore activity and have increased the number of bidders. In terms of their effect upon competitive results, joint ventures in offshore OCS lease auctions are pro-competitive.

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Senator HRUSKA. Fine. We stand adjourned until 9 o'clock in the morning.

[Whereupon, the proceedings were adjourned at 5:35 p.m. to reconvene the following day at 9:00 a.m.]

VERTICAL DIVESTITURE IN THE PETROLEUM INDUSTRY

FRIDAY, JANUARY 30, 1976

U.S. Senate,
Subcommittee on Antitrust and Monopoly
of the Committee on the Judiciary,
Washington, D.C.

The subcommittee met at 9 a.m., in room 2228, Dirksen Senate Office Building, Hon. James Abourezk presiding.

Staff present: Charles E. Bangert, general counsel; Henry A. Banta, assistant counsel; Walter S. Measday, chief economist; Patricia Y. Bario, professional staff member; William E. Kovacic, staff member; Catherine M. McCarthy, chief clerk; Peter N. Chumbris, minority chief counsel; Emory Sneeden, minority assistant counsel; Garrett Vaughn, minority economist; Charles E. Kern, staff member of Senator Fong.

Senator Abourezk. The Antitrust Subcommittee hearings will come to order.

I want to, first of all, welcome Mr. Scherer of the Federal Trade Commission this morning for his testimony, and for the record, I would like to announce that I believe the television crew this morning is from Standard Oil, is that correct?

Mr. Goldsmith. We are an independent company, Ari-Gem Productions, Inc., filming for Standard Oil of California.

Senator Abourezk. Mr. Sherer, if you are ready to proceed with your testimony, we are ready to hear it. We would like to welcome you to the subcommittee, first of all, and thank you for your appearance here today. Your reputation has preceded you. I guess I should say that your knowledge in this area is well known around the country among people who are interested in antitrust.

Dr. Sherer. Thank you very much, Mr. Chairman. It is a pleasure and an honor to appear before the subcommittee today.

STATEMENT OF F. M. SCHERER APPEARING AS AN INDIVIDUAL

Dr. Scherer. I should note at the outset that I have been asked to testify as an individual author of a recently published book on industrial scale economies, rather than in my role as director of the Federal Trade Commission's Bureau of Economics. Therefore, with one exception, which will be identified as such, I draw only upon evidence which I had already accumulated before joining the FTC. Needless to say, the views I express are strictly my own and not necessarily those of the Federal Trade Commission, other Bureau of Economics staff, or even my coauthors.

My statement is moderately long. I will read parts of it but abstract also certain parts in order to save the committee's time.

The issue I address is a straightforward one: What impact would structural reorganization, horizontal and/or vertical, have on the efficiency of the U.S. petroleum extraction, refining and distribution industry? It has been suggested that structural divestiture would propel the Nation into an era of $1 per gallon gasoline. Is there any reason to believe that reorganization would, in fact, lead to inefficiencies of that or even a lesser but appreciable magnitude?

The question of structural fragmentation versus industrial efficiency is of long-standing interest. It surfaced frequently early in this century when Theodore Roosevelt and others were debating what the Nation's policy should be toward the trusts. It reappeared in the perennial conflict over expanded enforcement or statutory toughening of the Sherman Act, section 2. As is often the case, these important deliberations had to go forward without a solid base of theory and evidence on the economic advantages of corporate size.

To fill that knowledge gap, several colleagues, students and I embarked more than 6 years ago upon a major research effort exploring the nature and magnitude of scale economies, or advantages of size, in 12 significant industries. In addition to petroleum refining, the industries covered were brewing, cigarettes, fabric weaving, paints, shoes, glass bottles, cement, steel, antifriction bearings, refrigerators, and storage batteries.

To maximize insight into the character of scale economies under diverse market conditions, our research investigated those 12 industries in six nations: The United States, Canada, the United Kingdom, West Germany, France, and Sweden. The book summarizing our findings was published last December under the title, "The Economics of Multiplant Operation." The title reflects what I consider the most unique of our contributions, a thorough exploration of the economic advantages realized by firms operating multiple plants, rather than just one.

Considerable prior work had been done by economists and engineers on the advantages of large scale within a single plant, but there was little systematic evidence on the advantages derived from controlling numerous plants, each perhaps of the most economical internal size.

What was known when we started, and what lent urgency to remedying the remaining knowledge gaps, was that in most industries the leading firms operate multiple plants and owe much of their overall size to their multiplant posture. Thus, if one seeks to understand the structure of manufacturing industries or what might happen if structural fragmentation took place, one must understand the economics of multiplant operation.

This generalization clearly applies to the U.S. petroleum industry. All of the leading eight domestic refiners operate multiple refineries at widely scattered domestic locations. Counting only refineries with crude inputs averaging 30,000 barrels per day or more, the big eight operated an average of 6.4 domestic refineries in 1969, and, of course, most operate numerous additional refineries in other parts of the world.

Given the sizes of a particular collection of petroleum refineries distributed over the map, what advantages flow from having them

controlled by a single firm, as compared to the situation which would prevail if each refinery operated as an independent corporate entity? We found that multiplant operation did offer certain economic advantages under the conditions existing in the U.S. petroleum refining industry as of 1970. The nature of those advantages is quite complex, so the most we could conclude was that firm operating only one efficient-sized refinery experienced anywhere from a very slight to a moderate price/cost handicap relative to a firm enjoying all the benefits of multiplant operation.

"Very slight" was defined here to mean a price or unit cost handicap of less than 1 percent, and "moderate" a handicap of 2 to 5 percent. Where in this range the singleplant refiner fell depended upon its regional market position, for example, whether its sales were concentrated in a small area of widely dispersed, and its access to crude oil. We concluded, too, that to experience price/cost handicaps of not more than about 1 percent, a firm needed to operate two to three refineries of minimum optimal scale. The advantages of multirefinery operation, identified in our study, were distributed across a number of functional areas. Table 1,[1] which I shall not try to read but which I will submit, estimates in 11 categories the extent to which single-plant refiners were handicapped relative to multiplant firms and the number of efficient-sized refineries needed to enjoy all observed benefits of multiplant operation. Among the observed advantages associated with multiplant size, four appeared to be of paramount importance: (1) Those involving vertical integration into key inputs, notably, crude oil and pipelining; (2) optimal investment staging; (3) access to capital; and (4) advertising and image differentiation. Each of these four warrants more detailed dicussion in the context of a proposal to restructure the U.S. petroleum industry.

Let us look first at the question of vertical integration. When we made our summary evaluations of table 1, nearly 4 years ago, we assigned high weight to the possibility that single-plant refiners might suffer significant crude oil access difficulties which would be reflected either in a price squeeze or the inability to obtain adequate crude supplies in a tight market. Since our field research was virtually completed in 1972, there have been radical changes in the industry; notably, the enormous OPEC-led increase in crude prices, the elimination of percentage depletion for large producers, the end of manatory import quotas, and the institution of pervasive industry regulation by the Federal Energy Administration. These events have changed the imperatives for vertical integration in complex ways.

To summarize briefly, after some initially counterproductive steps, FEA regulation has lessened the danger of a crude oil price or quantity squeeze on nonintegrated refiners; the rise in crude prices and depletion of inland reserves have escalated exploration costs and risks; and the abolition of percentage depletion has removed what we considered to be the principal inducement to squeezes on nonintegrated refiners. The last of these effects will assume critical importance. With no percentage depletion, the risk of a crude oil squeeze will be greatly reduced. Further assurance would undoubtedly come from a restructuring of the industry which lessened the concentration

[1] See p. 2140.

of crude oil production and reduced the incidence of competition-inhibiting joint ventures. Indeed, one of the strongest, perhaps the most strong, generalization that emerged from our 12-industry 6-nation study is this: The more prone input markets are to a breakdown of price competition, the stronger is a firm's incentive to integrate upstream. Or, to put it the other way around, workable competition in an input market substantially lessens the incentives to integrate.

Senator ABOUREZK. Mr. Scherer, could I just break in at that point, because I consider that to be a pretty important observation that you just made there? Saying it another way, do you think it is better to have, then, the production end of the petroleum industry broken away from the other integrated parts of it, so far as overall competition in the industry is concerned?

Dr. SCHERER. Well, yes; Senator, I think the problem in crude oil markets comes out of a combination and interaction of three things: (*a*) The vertical integration of many firms back into crude; (*b*) the degree of concentration, which is not terribly high, but is nevertheless appreciable in crude oil production; and (*c*) the complex interlock of joint ventures that leads to a high spirit of interdependence in the pricing of crude oil. The combination of these three things is the problem that creates insecurity of supply. If you could vertically disintegrate, if you could break up some or all of the major firm joint ventures, and if you could reduce concentration in crude oil production somewhat, I think you would get quite competitive crude oil supply, and then the incentive to integrate would be reduced greatly. The advantages of integration would be reduced greatly, perhaps to zero.

Senator ABOUREZK. So, getting back to my original question, going on what you say, what you have just said, I was going to say the simple act—it is not really simple—of perhaps prohibiting any oil producer from going into the other aspects of the oil industry, would then create more competition in production of crude oil, would give more refiners access to different sources of crude oil, and thereby break down the incentive to integrate upstream?

Dr. SCHERER. Yes, it would do that, Senator.

Senator ABOUREZK. In addition to the breaking up of the joint ventures, and so forth.

Dr. SCHERER. I am not sure I would go all the way to prohibit all integration, but I think a substantial reorganization of the vertical relationships would greatly free up that market and make it unnecessary to integrate in order to reduce risks substantially.

Senator ABOUREZK. Yes. That is the point. I guess what you are saying is—and it is a good point—that the balance of the industry would take care of itself. You would not have to prohibit integration further upstream. It would do it itself under a market system.

Dr. SCHERER. Let there be a free competitive market for crude oil, and firms would not feel the compulsion they presently do to integrate into crude oil production.

Senator ABOUREZK. Thank you.

Dr. SCHERER. Well, is it conceivable that refiners might nevertheless prefer that extra margin of security that integration into crude oil production confers. If some integration were permitted under reorganization, but if other industry institutions remain the same, the

risks of Outer Continental Shelf and Alaskan Slope exploration would be severe, and perhaps prohibitively high, for a firm of efficient single-refinery scale. But there is a solution, too, to that problem. One possible solution is joint exploration ventures, but they almost surely enhance respect for mutual pricing interdependence among firms and hence lessen the likelihood of achieving workable competition. To advance an alternate solution, the staffs of the FTC's Bureaus of Competition and Economics issued last October a joint report on Federal energy land leasing policy, including an intensive analysis of oil and gas tract leasing methods.

We concluded that the bonus bid system used for offshore oil tract leasing had magnified the risks and capital barriers to the independent entry of smaller producers, among other things increasing thereby the concentration of offshore reserves. We concluded, too, that the problem appeared likely to become even worse with the rise in crude oil prices and the movement to new exploration frontiers. We also proposed various alternative leasing methods; most notably, a two-stage competitive bidding approach which would significantly reduce exploration risks and hence encourage small-firm exploration while also enhancing the Federal Government's leasing revenues. I have seen nothing since then to suggest that our analysis was wrong, and the disappointing results of the California offshore lease sale this past December lend support to our findings. In short, by declining to provide special tax immunities for crude oil production, by reforming Government oil land leasing policies, by deconcentrating existing crude oil reserves, and by discouraging joint crude exploration and production ventures, it would be possible to eliminate most, if not all, of the integration advantage multiplant refiners have enjoyed over single-plant firms. Thus, one of the most important scale-increasing propensities identified in our multiplant operation study could be attenuated greatly.

Senator ABOUREZK. Could I once again break in and ask if you would describe in just a little more detail that two-stage competitive bidding approach that you spoke of?

Dr. SCHERER. Well, let me begin, Senator, by noting that under the present system, one goes for broke right at the beginning of the exploration process. That is to say, the companies bid on offshore tracts before they have done anything but go over in a ship and take seismic measurements. They do not know whether oil is there or not. So it is a huge risk, and yet enormous amounts of money are gambled on this risk. What we propose to do is to eliminate that risk by permitting open access to the offshore fields for exploration purposes. The firm that, through its bonus-free offshore explorations, hits an oil reservoir would then be given certain preferential rights in a second round of bidding. That is to say, the bidding for production rights would take place in the presence of knowledge as to the fact that there is oil on the tract being bid for, and also some knowledge as to the amount of that oil. In other words, the principal uncertainty in the bidding process would be eliminated. This risk elimination, we think, would greatly reduce the barriers to exploration by small firms. It would speed up the rate of exploration, we believe, and, by deferring the bidding process until a point at which the risks have been minimized,

it will enhance the Federal Government's bidding take, once the bids actually come in.

Let me go on to another aspect of vertical integration. Persistent economies of scale tend to make petroleum pipeline operations between two points a so-called "natural monopoly." Regulation has been imposed to combat market failure problems associated with this monopoly, but the regulation has been rather ineffective, largely because of provisions relating the allowable profit to total capital, and thus encouraging high debt leveraging. This and certain other features have spurred companies to integrate into pipeline ownership, thus increasing the capital costs required of a single-refinery firm. More effective regulation, perhaps coupled with vertical divestiture, making pipelines truly independent common carriers, would enhance the viability of single-plant refiners.

I think I will skip altogether the discussion of optimal investment staging, which is a very complicated matter. Let me simply say that the generalization I have stated earlier on vertical integration applies here too. Specifically, when markets are working badly, there are advantages in investment planning to being a multiplant refiner. However, when product markets are working well, it turns out that these advantages of coordinated multiplant investment staging tend to disappear.

I will go on, then, to the third aspect in which we found important advantages of multiplant operation, and that is in the area of acquiring new money capital. Largely because of greater risk-spreading ability, transaction cost savings when securities are issued in large blocks, and their higher public visibility, large corporations are able to raise additional capital at a lower cost per dollar than small companies. This is an advantage of large scale which appears to persist out to very high levels of multiplant operation, all else equal. Studies which would permit precise estimation of a single-plant firm's capital cost-raising handicap have not, to the best of my knowledge, been carried out. Extrapolating from our own analysis of size-related debt cost differentials out to average corporation sizes of only $1 billion, I estimate that the capital-raising advantage of a petroleum firm with assets of $30 billion over an equally integrated firm operating one 200,000-barrel-per-day refinery would be somewhere between three-tenths of a cent and six-tenths of a cent on the incremental petroleum product wholesale sales dollar. Of course, for entities formed through structural reorganization, this effect would be relevant mainly to securities issued for expansion, and not to the capital they inherit from the reorganization.

The fourth major area of advantage associated with large size has to do with advertising and image differentiation. Multiplant, multiregion petroleum companies are able to derive certain advantages in brand recognition and in the cost of advertising their products. For one, they can advertise their products on nationwide network television, an option effectively denied single-plan firms selling in only one geographic region. They may also spread virtually fixed-advertising preparation costs over a larger advertising dollar volume.

Although the evidence is meager, I estimate that these savings from network advertising and preparation cost spreading could not

have amounted to much more than one-tenth of a cent per dollar on petroleum products sold during the late sixties. If the leading petroleum companies were broken up horizontally, they would no longer be positioned to sell gasoline in all, or most parts, of the United States. Therefore, they would lose the brand recognition advantage which comes when, say, a New York resident travels to California and sees the familiar Exxon sign. Since our interviews revealed that most gasoline consumers exhibit only weak brand preferences, it is unlikely that such a change would have much adverse impact on either consumers or the refining companies. If I am wrong on this judgment, the loss of nationwide brand coverage could be remedied easily by voluntary or compulsory brand-name licensing at very low royalties.

Let me sum up. The studies by my colleagues and me suggest that the advantages enjoyed by large multiplant refiners over efficient single-plant firms have been modest in the past, and they would be even less significant if competition in crude oil production and refined product sales were enhanced through structural reorganization. If large petroleum firms are, at best, not much more efficient than single refinery operators, I think it follows that the fragmentation of multi-refinery companies into smaller units operating only a single large refinery or a few smaller refineries would cause little efficiency loss.

To be sure, there might be transitional inefficiencies if the reorganization were carried out clumsily, or with a heavy hand. But once the industry had adapted to its new structure, the sacrifice of multiplant operating economies would be modest, almost surely not more than 1 percent of sales, or about one-tenth the probable free market impact on gasoline prices, had a full $3 tariff on imported crude oil come into effect. And this, I believe, is a rather pessimistic estimate. The market, if kept competitive but otherwise left unfettered, is a robust disciplinary mechanism. Enterprises which once enjoyed certain efficiencies through multiplant operation would undoubtedly adapt after reorganization and find new opportunities for achieving the same result through competitive purchase and sales in the marketplace.

This, at least, is one of the most powerful lessons we learned from our interviews with 125 U.S. and foreign companies, some with extensive multiplant operation and many others with only one or a few plants. Since that was somewhat out of context, I should note that it is 125 companies in 12 industries, not 125 petroleum companies.

It seems to me then that the feared social costs of petroleum industry reorganization ought, if I assessed correctly, to be only a minor deterrent to action. The more important question is what kind of industrial power structure and hence, ultimately, what kind of society we wish to have. That fundamental value judgment must be resolved either by Congress or the judicial system.

Thank you very much, Senator Abourezk.

Senator Abourezk. Thank you, Mr. Schere, for an excellent oral statement. Your prepared statement will be printed in the record in full.

[The prepared statement of Dr. Scherer follows. Testimony resumes on p. 2146.]

Prepared Statement of F. M. Scherer, Federal Trade Commission, Bureau of Economics

This statement contains the individual views of the witness and is not made in his capacity as a member of the Federal Trade Commission staff. The remarks are not intended to be, and should not be construed as, representative of an official commission policy.

It is a pleasure and an honor to appear before the Subcommittee today. I should note at the outset that I have been asked to testify as individual author of a recently published book on industrial scale economies,[1] rather than in my role as director of the Federal Trade Commission's Bureau of Economics. Therefore, with one exception which will be identified as such, I draw only upon evidence which I had already accumulated before joining the FTC. And of course, the views I express are strictly my own and not necessarily those of the Commission, other Bureau of Economics staff, or my co-authors.

The issue I address is a straightforward one: what impact would structural reorganization, horizontal and/or vertical, have on the efficiency of the United States petroleum extraction, refining, and distribution industry? It has been suggested that structural divestiture would propel the nation into an era of one dollar per gallon gasoline. Is there any reason to believe that reorganization would in fact lead to inefficiencies of that or even a lesser but appreciable magnitude?

The question of structural fragmentation vs. industrial efficiency is of long-standing interest. It surfaced frequently early in this century when Theodore Roosevelt and others were debating what the nation's policy should be toward "the trusts." It reappeared in the perennial conflict over expanded enforcement or statutory toughening of Sherman Act Section 2. As is often the case, these important deliberations had to go forward without a solid base of theory and evidence on the economic advantages of corporate size.

To help fill that knowledge gap, several colleagues, students and I embarked more than six years ago upon a major research effort exploring the nature and magnitude of scale economies, or advantages of size, in twelve significant industries. In addition to petroleum refining, the industries covered were brewing, cigarettes, fabric weaving, paints, shoes, glass bottles, cement, steel, anti-friction bearings, refrigerators, and storage batteries. To maximize insight into the character of scale economies under diverse market conditions, our empirical research investigated those twelve industries in six nations— the United States, Canada, the United Kingdom, West Germany, France, and Sweden. The research had three main thrusts: we extended the theory of scale economies, carried out statistical analyses, and developed qualitative information through interviews with 125 producers in the six nations and twelve industries. The book summarizing our findings was published in December under the title,

THE ECONOMICS OF MULTI-PLANT OPERATION

The title reflects what I consider the most unique of our contributions—a thorough exploration of the economic advantages realized by firms operating multiple plants, rather than just one. Considerable prior work had been done by economists and engineers on the advantages of large scale within a single plant, but there was little systematic evidence on the advantages derived from controlling numerous plants, each perhaps of the most economical internal size. What was known when we started, and what lent urgency to remedying the remaining knowledge gaps, was that in most industries the leading firms in fact operate multiple plants and owe much of their overall size to their multi-plant posture. Thus, if one seeks to understand the structure of manufacturing industries, or what might happen if structural fragmentation took place, one must understand the economies of multi-plant operation.

THE EXTENT OF MULTI-REFINERY OPERATION

This generalization clearly applies to the U.S. petroleum industry. All of the leading eight domestic refiners operate multiple refineries at widely scattered U.S. locations, as the following listing derived from Department of the Interior data for 1969 indicates:

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[1] F. M. Scherer, Alan Beckenstein, Erich Kaufer, and R. Dennis Murphy (with the assistance of Francine Bougeon-Maassen), *The Economics of Multi-Plant Operation: An International Comparisons Study* (Harvard University Press, 1975).

Company	Number of domestic refineries with average crude oil input of—	
	At least 30,000 bbl/d	At least 120,000 bbl/d
Exxon	[1] 5	3
Texaco	8	2
Shell	7	3
Standard/Indiana	9	2
Mobil	8	1
Standard/California	6	3
Gulf	4	2
Atlantic-Richfield	4	3

[1] Includes Exxon's Benicia, Calif., refinery, which came on stream with a small output in the reporting period ending Sept. 30, 1969.

Some changes have occurred since 1969 through the closure or expansion of refineries near my 30,000 bbl/day size cutoff, but the basic conclusion remains unaltered: the size of the leading U.S. petroleum refiners is attributable in significant measure to multi-plant operation. And of course, most operate numerous additional refineries in other parts of the world.

THE CONSEQUENCES OF INCREASED PLANT SIZE

The sizes of the refineries operated by the domestic industry leaders vary widely both between firms and between locations within a given corporation. Exxon had in 1969 the largest single refinery (at Baton Rouge, Louisiana) among the eight, averaging 415,450 barrels per day crude input. California Standard's largest refinery (at El Segundo), on the other hand, processed only 153,000 bbl/day. Only eleven of the refineries operated domestically by the Big Eight had a capacity in 1969 of 200,000 barrels per day or more—the volume which, my co-authors and I found, was necessary to achieve all significant economies of scale at the single-plant level, assuming 1965 technology and economic conditions.[2] We estimated that in a plant with only one-third that capacity, 1965 processing costs per barrel (including capital and crude oil input costs) were roughly 4.8 percent higher than in a 200,000 bbl/day refinery. Most refineries of the Big Eight have been built at scales considerably smaller than 200,000 bbl/day because of limited market absorption potential and/or because the cost savings from operating larger, less decentralized refineries would be more than offset by increased product transportation costs except where excellent water or product pipeline transportation facilities exist.

Before turning to the evidence on multi-plant scale economies, I should like to note one further consequence of size at the individual plant level. Social psychologists have in recent years accumulated an impressive amount of evidence that workers' satisfaction with their jobs, and especially with the challenge their jobs offer, declines as the size of the plants in which they work increases.[3] Job satisfaction is particularly low in establishments with 500 or more employees—a threshold surpassed by 56 domestic petroleum refineries in 1967. Employers evidently compensate their workers for the lower pyschic satisfaction large-plant jobs offer by paying premium wages. There is also evidence that the large plant/small plant wage differential is rising over time ,suggesting that the incremental level of job dissatisfaction which must be overcome in large plants has been increasing. We know far too little about this dimension of the plant scale problem, which may have potent implications for the kind of society in which we shall live in coming decades.

THE ADVANTAGES OF MULTI-REFINERY OPERATION

Given the sizes of a particular collection of petroleum refineries appropriately distributed over the map, what advantages flow from having them controlled by a single firm, as compared to the situation which would prevail if each re-

[2] See the appended analysis of the technological bases of petroleum refinery scale economies, drawn from F. M. Scherer, *Economies of Scale at the Plant and Multi-Plant Levels* (privately published, 1975), pp. 15–19.

[3] See F. M. Scherer, "Industrial Structure, Scale Economies, and Worker Alienation," *of Joe S. Bain* (Ballinger, forthcoming).
in Robert Masson and P. David Qualls, ed., *Essays on Industrial Organization in Honor*

finery operated as an independent corporate entity? Again, this was a prime question addressed by colleagues Kaufer, Bougeon-Maassen, Beckenstein and Murphy and myself.

We found that multi-plant operation did offer certain economic advantages under the conditions existing in the U.S. petroleum refining industry as of 1970. The nature of those advantages is quite complex, so the most we could conclude was that a firm operating only one efficient-sized refinery experienced anywhere from a very slight to moderate price-cost handicap relative to a firm enjoying *all* the benefits of multi-plant operation. "Very slight" was defined to mean a price or unit cost handicap of less than one percent, and "moderate" a handicap of two to five percent. Where in this range the single-plant refiner fell depended upon its regional market position (e.g., whether its sales were concentrated in a small area or widely dispersed) and its access to crude oil. We concluded too that to experience price-cost handicaps of not more than about one percent ,a firm needed to operate two to three refineries of minimum optimal scale—that is, with capacities of roughtly 200,000 barrels per day each. Although the complication is not discussed in our original work, the disadvantages of single-plant as compared to multi-plant size would not differ appreciably if the comparison were between a firm operating one 120,000 bbl/day refinery and a company operating multiple refineries with individual or average capacities of 120,000 barrels. To be sure, some "plant-specific" cost advantages would be sacrified, but the multi-plant cost and price relationships would remain nearly invariant.

The advantages of multi-refinery operation identified in our study were distributed across a number of functional areas. Table 1 estimates in eleven categories the extent to which single-plant refiners were handicapped relative to multi-plant firms and the number of efficient-sized refineries needed to enjoy all observed benefits of multi-plant operation. In developing this table, it should be noted, no attempt was made to quantify in any standard way the meaning of "slight," "moderate," etc., as they were quantified for the overall summary assessment above. Among the perceived detailed advantages associated with multiplant size, four appeared to be of paramount importance: those involving vertical integration into key inputs (notably, crude oil production), optimal investment staging, access to capital, and advertising and image differentiation. Each of these four warrants more detailed analysis in the context of a proposal to restructure the U.S. petroleum industry.

TABLE 1.—ESTIMATED EXTENT TO WHICH EFFICIENT SINGLE-PLANT REFINERS WERE DISADVANTAGED AND THE NUMBER OF REFINERIES REQUIRED TO REALIZE ALL MULTIPLANT ECONOMIES UNDER U.S. MARKET CONDITIONS, CIRCA 1970

Category	Handicap of single-plant refiner	Number of efficient refineries needed to realize all advantages
Advertising and image differentiation	Slight to moderate	1 to 4.
Access to markets and distribution channels	None	1.
Procurement of materials	No evidence; probably none	1?
Vertical integration into key inputs	Moderate	2 to 5.
Outbound transport pooling	None	1.
Peak spreading, risk spreading, and other massed reserves	Slight	2 to 3.
Acquisition of capital	Moderate	No clear limit.
Optimal investment staging	Slight to moderate	2 to 3.
Product specialization and lot-size economies	Little or none	1.
Managerial and central staff economies	Multiplant size probably disadvantageous.	
Research, development, and technical services	Slight	2 to 4.

Source: Scherer et al., "The Economies of Multi-Plant Operation," pp. 334–335.

VERTICAL INTEGRATION

When we made the summary subjective evaluations of Table 1 nearly four years ago, we assigned high weight to the possibility that single-plant refiners might suffer significant crude oil access difficulties, reflected either in a price squeeze or the inability to obtain adequate crude supplies in a tight market. Our conclusion differed from that of Professor Joe S. Bain in a 1950's study using similar methodology.[4] Attempting to reconcile the difference, we wrote:

[4] Joe S. Bain, *Barriers to New Competition* (Harvard University Press, 1956), especially pp. 85–88, 137–138, and 152–154.

" . . . For petroleum refining [Bain] finds no significant economies of multi-plant operation while we do. We share his judgment where crude oil markets function competitively and competitive product market transactions make optimal internal multi-plant investment staging redundant. The rising scale requirements for crude oil exploration as inland reserves have become exhausted, the imposition of mandatory import quotas from 1959 to 1973 and the more recent tightening of domestic crude markets, and the rise of national television advertising directed toward increasingly mobile consumers may represent sufficient changes to explain the differences in our evaluations."[5]

Since our field research was virtually completed in 1972 there have been further radical changes: the enormous OPEC-led increase in crude prices, the elimination of percentage depletion for large producers and the end of mandatory import quotas, and the institution of pervasive industry regulation by the Federal Energy Administration.

These events have changed the imperatives for vertical integration in complex ways. To summarize briefly, after some initially counterproductive steps, FEA regulation has lessened the danger of a crude oil price or quantity squeeze on non-integrated refiners; the rise in crude prices and further depletion of inland reserves has escalated exploration costs and risks; and the abolition of percentage depletion has removed what we considered to be the principal inducement to squeezes on non-integrated refiners.[6]

When and if FEA controls are stripped away, the last of these will assume critical importance. With no percentage depletion, the risk of a crude oil squeeze will be greatly reduced. Further assurance would undoubtedly come from a restructuring of the industry which lessened the concentration of crude oil production. Indeed, one of the strongest generalizations that emerged from our twelve-industry study is this: the more prone input markets are to a breakdown of price competition, the stronger is a firm's incentive to integrate upstream. Or obversely, workable competition in an input market substantially lessens the incentives to integrate.

It is conceivable that refiners might nevertheless prefer the extra security that integration into crude oil production confers. If integration were permitted under reorganization but other industry institutions remain the same, the risks of offshore and Alaskan slope exploration would be severe and perhaps prohibitively high for a firm of efficient single-refinery scale. One possible solution is joint exploration ventures, but they almost surely enhance respect for mutual interdependence among firms and hence lessen the likelihood of achieving workable competition. To advance an alternate solution, I am forced to draw upon knowledge acquired in my duties at the Federal Trade Commission. Last October the staffs of the Bureaus of Economics and Competition issued a joint report on Federal energy land leasing policy, including an intensive analysis of oil and gas tract leasing methods.[7] We concluded that the bonus bid system used for offshore oil tract leasing had magnified the risks and capital barriers to the independent entry of smaller producers, among other things increasing thereby the concentration of offshore reserves, and that the problem appeared likely to become even worse with the rise in crude oil prices and the movement to new exploration frontiers. We also proposed various alternative leasing methods—most notably, a two-stage competitive bidding approach—which would significantly reduce exploration risks and hence encourage small-firm exploration while enhancing the Federal Government's leasing revenues. I have seen nothing since then to suggest that our analysis was wrong, and the disappointing results of the California offshore lease sale last December lend support to our findings.

In short, by declining to provide special tax immunities for crude oil production, by reforming government oil land leasing policies, by deconcentrating existing crude oil reserves, and by discouraging joint crude exploration and production ventures, it would be possible to eliminate most, if not all, of the integration advantage muti-plant refiners have enjoyed over efficient single-plant firms. Thus, one of the most important scale-increasing propensities identified in our multi-plant operation study could be attenuated greatly.

Persistent economies of scale tend to make petroleum pipeline operations between two points a "natural monopoly." Regulation has been imposed to com-

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[5] Scherer et al., pp. 341–342

[6] *Ibid.*, p. 263.

[7] Federal Trade Commission staff report, ***Federal Energy Land Policy: Efficiency, Revenue, and Competition*** (October 1975).

bat market failure problems, but the regulation has been rather ineffective, largely because of provisions relating the allowable profit to *total* capital, thus encouraging high debt leveraging. This and certain other features have spurred companies to integrate into pipeline ownership, thus increasing the capital costs required of a single-refinery firm. More effective regulation, perhaps coupled with vertical divestiture making pipelines truly independent common carriers, would enhance the viability of single-plant refiners.

OPTIMAL INVESTMENT STAGING

Another potentially significant advantage of multi-refinery petroleum companies is the ability to expand capacity in more efficient stages at refineries linked by good product transportation networks. Very briefly, a firm experiencing demand growth in the natural market territories of its refineries A, B, and C can first expand in a large lump at refinery A, simultaneously cutting back on the shipping radii of refineries B and C and taking up the slack by shipping the increased output from A over a broader area. In later stages it then effects similar expansions and territorial redistributions centered on sites B and C. Through such investment staging it may be possible to build larger plant increments at any given stage, and hence to realize the advantages of plant scale more fully, while reducing the amount of excess capacity carried following major expansions.

Nevertheless, the generalization identified earlier with respect to vertical integration also applies to such multi-region horizontal investment integration. Specifically, the more effectively competition in petroleum product markets is working, the less beneficial the multi-plant coordination of investments in different regions becomes. My colleagues and I found sufficient competition in petroleum product markets that reliance upon market transactions often proved a good substitute for intra-firm investment staging. To the extent that horizontal and vertical reorganization improves the workabiliy of product market competition, the incremental investment phasing advantages associated with multi-refinery operation will be rendered correspondingly less important. They are not apt in any event to be as substantial as they have been in the past, since the demand growth which calls forth plant expansions will undoubtedly be curbed by rising crude oil and product prices as controls are removed and (over the much longer run) as high-grade crude reserves are gradually depleted.

CAPITAL ACQUISITION COSTS

Largely because of greater risk-spreading ability, transaction cost savings when securities are issued in large blocks, and their higher public visibility, large corporations are able to raise additional capital at a lower cost per dollar than small companies. This is an advantage of large scale which appears to persist out to very high levels of multi-plant operation, all else equal. Studies which would permit precise estimation of a single-plant firm's capital cost-raising handicap have not, to the best of my knowledge, been carried out. Extrapolating from an analysis of size-related debt cost differentials out to average corporation sizes of only \$1 billion,[8] I estimate that the capital raising advantage of a petroleum firm with assets of \$30 billion over an equally integrated firm operating one 200,000 bbl/day refinery would be somewhere between 0.3 and 0.6 cents on the incremental petroleum product wholesale sales dollar. Of course, for entities formed through structural reorganization, this effect would be relevant mainly to securities issues for expansion, and not to the capital they inherit from the reorganization.

ADVERTISING AND IMAGE DIFFERENTIATION

Multi-plant, multi-region petroleum companies are also able to derive certain advantages in brand recognition and in the cost of advertising their products. For one, they can advertise their products on nationwide network television—an option effectively denied single-plant firms selling in only one geographic region. They may also spread virtually fixed advertising preparation costs over a larger advertising dollar volume. Although the evidence is meager, I estimate that these savings from network advertising and preparation cost spreading could not have amounted to more than one-tenth of a cent per dollar on petroleum products sold during the late 1960's.

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[8] Scherer, *Economies of Scale at the Plant and Multi-Plant Levels*, pp. 126–133.

If the leading petroleum companies were broken up horizontally, they would no longer be positioned to sell gasoline in all or most parts of the United States. Therefore, they would lose the brand recognition advantage which comes when, say, a New York resident travels to California and sees the familiar Exxon sign. Since our interviews revealed that most gasoline consumers exhibit only weak brand preferences, it is unlikely that such a change would have much adverse impact on either consumers or the refining companies. If I am wrong on this judgment, the loss of nationwide brand coverage could be remedied by voluntary or compulsory brand name licensing at very low royalties.

SUMMARY

In sum, the studies by my colleagues and me suggest that the advantages enjoyed by large multi-plant refiners over efficient single-plant firms have been modest in the past, and they would be even less significant if competition in crude oil production and refined product sales were enhanced through structural reorganization. If large petroleum firms are at best not much more efficient than single refinery operators, it follows that the fragmentation of multi-refinery companies into smaller units operating only a single large refinery or a few smaller refineries would cause little efficiency loss. To be sure, there might be transitional inefficiencies if the reorganization were carried out with a heavy hand. But once the industry had adapted to its new structure, the sacrifice of multi-plant operating economies would be modest—almost surely not more than one percent of sales, or about one-tenth the probable free market impact on gasoline prices, had a full $3.00 tariff on imported crude oil come into effect. And this, I believe, is a rather pessimistic estimate. The market, if kept competitive but otherwise left unfettered, is a robust disciplinary mechanism. Enterprises which once enjoyed certain efficiencies through multi-plant operation would undoubtedly adapt after reorganization and find new opportunities for achieving the same result through competitive purchases and sales in the market place. This, at least, is one of the most powerful lessons we learned in our interviews with 125 U.S. and foreign companies, some with extensive multi-plant operation and many others with only one or a very few plants. It seems to me then that the feared social costs of petroleum industry reorganization ought, if assessed correctly, to be only a minor deterrent to action. The more important question is what kind of industrial power structure and hence, ultimately, what kind of society we wish to have. That fundamental value judgment must be resolved either by Congress or the judicial system.

APPENDIX—SCALE ECONOMIES IN PETROLEUM REFINING

A petroleum refinery is in essence an aggregation of plumbing, much of which conforms over broad ranges to the two-thirds rule: as throughput and hence processing vessel volume increases, vessel surface area and hence (roughly) materials and fabrication costs rise by the two-thirds power.

Refineries extract and transform from crude petroleum a variety of products, including gasoline, fuel oil of various densities, kerosene, jet and Diesel fuels, propane gas, lubricating oils (after further processing, often at separate plants), asphalt, coke, and various petrochemical feedstocks such as benzene, xylene, and propylene. The mix of products depends partly upon the composition of the crude oil processed but mainly upon the processing equipment and operating modes selected. Refineries may emphasize gasoline, fuel oils, feedstocks, or various combinations thereof. U.S. refineries tend to be more gasoline-oriented than northern European refineries, where fuel oil is the leading product. Average 1967 gasoline yields were 48 percent in the United States compared to 17 percent in Germany, France and England combined.

The most basic processing unit at a refinery is the distillation stage, consisting of a furnace to boil the crude oil and a fractionation tower to separate components of diverse boiling points and densities. The emerging distillation fractions tend for most crude oil inputs to be rich in fuel oil and lean in gasoline. U.S. refineries therefore require fairly intensive further processing, while European refineries need much less. Major post-distillation units may include catalytic crackers or hydrocrackers, in which heavy fractions (e.g., fuel oils) are exposed to a catalyst under heat and pressure to break down their molecules into lighter gasoline-like components; catalytic reformers, in which naptha molecules are rearranged in the presence of hydrogen to form high-octane gasoline or other light products; alkylation units combining gaseous hydrocarbon molecules

to form liquid gasoline; coking units, in which very heavy residual fractions are heated and broken down into fuel oil, gasoline, and coke; hydrogen or chemical treating units for desulfurization; and blending units to combine fractions and additives (such as tetraethyl lead) into end products with the desired chemical properties. Few refineries incorporate all these processes. Processes are chosen to satisfy a particular market's product mix demands. All else equal, the more processes a refinery includes, the more gasoline-rich its end product mix will be and the more flexibility it will have in adjusting to changing crude oil input characteristics end product six demands.

Investment scale economies are realized out to substantial unit sizes in nearly all the major refining processes. Since all crude oil inputs must pass through it, the distillation unit plays a key role in determining the minimum optimal scale. In principle the two-thirds rule holds approximately for fractionation towers even larger than any constructed to date, but many design and metallurgical problems must be solved in building larger units, and "first-time" versions of a new scaled-up unit tend to cost considerably more per barrel of capacity than simple extrapolation by the two-thirds rule would suggest. Progress has been unrelenting, however, and by the mid-1960's single distillation units capable of processing 200,000 (42 U.S. gallon) barrels of crude oil per day, or roughly 10 million metric tons per 365-day year, had been developed to the point of having lower capital costs per barrel than facilities of lower capacity. This fact was decisive in several firms' estimates of the minimum optimal scale. Nevertheless, there is some risk in putting all one's eggs in a single basket susceptible to catastrophic failure, so a refinery with two smaller 150,000 barrel per day distillation units might have lower perceived cost per unit, *including* a risk premium for lost sales, than one with a single "best practice" furnace and tower. Since this risk cost is strictly private, since supply interruption risks can also be reduced by operating multiple refineries spaced within tolerable shipping distances of one another or through market transactions, and since many firms in fact appear willing to operate refineries with only one distillation unit, we have not considered such hedging to be essential in determining an MOS refinery's size.

None of the major "downstream" processes requires throughputs as large as the distillation unit to achieve all known scale economies. However, most receive only a part of the still's output as input, and for units such as catalytic crackers and cokers, scale economies persisted out to throughputs of 40–50,000 barrels per day with mid-1960's technology or as much as 80,000 barrels per day in the early 1970's. Complicated least common multiple problems therefore arise. There is no single best combination; much depends upon the desired product mix. For a U.S.-type refinery with a high gasoline yield, all or nearly all scale economies are likely to be attained in downstream processing units when total refinery inputs reach 200,000 barrels of crude oil per day, and indeed, some replication might occur. The amount of replication again depends upon the technology vintage. There has been more or less continuous progress in scaling up not only major units such as catalytic crackers but also high-flow valves, compressors, and other components. As of 1965, the main advantage other than risk-spreading enjoyed by a U.S.-type refinery with more than 200,000 barrels per day capacity was ability to dovetail individual units somewhat more effectively, thereby minimizing the sacrifice of scale economies on units processing only a small fraction of total refinery throughput. For a European refinery with a much lower gasoline yield, installing full-size crackers is more difficult at distillation capacities of 200,000 barrels per day.

The cost of certain refinery overhead facilities such as administrative offices, a control center, a quality control laboratory, and perhaps an electrical generating plant also rises less than proportionately with throughput, with some (probably minor) savings continuing beyond 200,000 barrel per day capacities. More important are possible crude oil receiving and storage scale economy possibilities. The laid-down cost of crude oil was in 1965 four to six times in-plant processing costs for a typical refinery. By 1973 it was seven to ten times as costly. Obtaining crude oil at the lowest possible cost is therefore vital. If deep-draft tankers can be used, they are likely to be the least-cost medium, with shipping costs per ton mile one-fifth to one-tenth as high as large-diameter pipelines. There was a sharp jump in best-practice tanker sizes from 105,000 deadweight tons in 1960 to 367,000 tons in 1971, and 500,000 ton ships were under construction in the early 1970's. Tanker unloading facilities require a substantial investment almost invariant with respect to capacity. A 250,000 ton tanker takes

about 30 hours to unload, but can supply a 200,000 barrel per day refinery for nine days. Much larger refineries served by supertankers utilize their unloading facilities more fully, achieving lower dock investment carrying costs per barrel. Nevertheless, it is common for several refineries located in the same geographic area to share the use of a single unloading facility, in which case smaller plants are not necessarily disadvantaged. Also, less crude oil storage capacity (increased by replication of tanks at constant unit cost) is required per barrel of refinery throughput when the interval between tanker calls is short. Except with extremely large tankers, however, this scale economy is probably exhausted at refinery capacities near 200,000 barrels per day, since some reserve against supply interruptions must be carried in any event, and the risk to be minimized is apt to be more closely correlated with time (and hence with total usage) than with the capacities of individual ships. Moreover, many refineries are simply not in a position to be supplied by supertankers, e.g., because their markets lie too far inland, or in the case of U.S. eastern seaboard refineries, because port channels were deep enough to accept tankers no larger than 80,000 deadweight tons.[9] Thus, the scale economies associated with receiving crude oil from deep-draft tankers apply only in a special, limited set of cases.

Our emphasis thus far has been on investment economies, which in the capital-intensive refining industry are particularly important. Many overhead work force requirements also expand less than proportionately with throughput, and for functions directly linked to the operation and routine maintenance of specific processing units, employment may come close to being fixed, irrespective of size.[10] Still our inteviews revealed that many other jobs, especially in the maintenance area, increase with scale, perhaps even proportionately as further capacity expansion begins to require unit replication. There was also reason to believe that larger refineries had less taut staffing standards than small works, in part because the geographic expanse of a sizeable refinery is so vast that it is hard to keep track of what roving maintenance personnel are doing. Quantitative analysis of this phenomenon is complicated by the tendency of refineries to pursue widely varying policies with respect to the amount of non-routine maintenance work contracted out.

Bringing together the various strands, we conclude that significant scale economies persisted out to a capacity of at least 200,000 barrels crude input per day for 1965-vintage refineries, and it is there that we have pinpointed our minimum optimal scale estimate. Slight low-volume process balance and overhead economies may have continued into higher capacity ranges, perhaps more in refineries with characteristically European than American product mixes. More important ship unloading facilities economies may not be exhausted even at Shell's 500,000 barrel per day complex at Pernis near Rotterdam—the world's largest refinery as of 1970. We ignore the deep water port case in part because deep-draft tankers were only beginning to appear in 1965 and partly because joint use of port facilities minimizes the disadvantage of smaller size when several refineries are clustered in the same general area.

There have been several published analyses of scale economies in refining. Not all have attempted to identify a single size as the minimum optimal scale. McLean and Haigh, for example, made no explicit MOS judgment in their study of scale economies for 1950-vintage U.S. Gulf Coast refineries, but they show declining long-run unit costs out to a capacty of 200,000 barrels per day—the largest scale to which their estimates were carried.[11] A 1962 United Nations analysis extended only up to capacities of 140,000 barrels per day, showing unit costs declining at a diminishing rate up to that volume.[12] Bain placed the MOS for an early 1950's seaboard refinery at 120,000 barrels per day.[13] Ostensibly employing an MOS definition similar to ours, but dismissing the savings shown by McLean and Haigh in the 100–200,000 barrel range as insubstantial, Eastman and Stykolt pinpointed the MOS under Canadian conditions for 1956 at a capa-

[9] See "No Superports for Supertankers," *Business Week*, May 20, 1972, pp. 108–110.

[10] Cf. Lau and Tamura, "Economies of Scale, Technical Progress, and the Nonhomothetic Leontief Production Function," *Journal of Political Economy*, Nov.–Dec. 1972, pp. 1180–1183.

[11] John G. McLean and Robert V. Haigh, *The Growth of Integrated Oil Companies* (Boston: Harvard Business School Division of Research, 1954), p. 567.

[12] Techniques of Petroleum Development, Proceedings of a United Nations Interregional Seminar (New York, 1962), cited in Gunnar Ribrant, *Stordriftsfordelar inom Industriproduktionen* (Stockhlom: Statens offentliga utredningar, 1970), pp. 249–250).

[13] *Barriers to New Competition, op. cit.*, pp. 76–80 and 233.

city of 100,000 barrels per day.[14] The 1965 study by Pratten and Dean also analyzed the behavior of costs only up to capacities of 200,000 barrels.[15] In his 1971 addendum Pratten fixed his MOS estimate at 200,000 barrels, using an MOS definition conceptually analogous to Cockerill's. He noted that recent technological advances permitted 400,000 barrel refineries to operate at unit costs (including crude oil inputs introduced at constant unit cost) roughly 1.2 percent lower than a 200,000 barrel plant.[16] In general, our estimates appear to lie in the same range as those of other analysts after differences in the technology vintage assumed are taken into account.

Senator ABOUREZK. Dr. Scherer, I wonder if you are familiar with any of the previous testimony before this committee, which related the advantages of vertical integration by some of the oil companies and the people who have spoken for them?

Dr. SCHERER. Well, I did, Senator, read the testimony of the president of Mobil Oil, Mr. Tavoulareas, and also of Professor Mitchell.

Senator ABOUREZK. Are you prepared to give any comments about that testimony and about the contentions made by those people?

Dr. SCHERER. Well, yes, I think they make a number of good points, but there is one fundamental thing that they seem to overlook. The president of Mobil noted that the key incentive to vertical integration is securing crude oil supplies. Professor Mitchell noted that there are risks associated with not being integrated into crude oil. They overlooked, however, the fact that these phenomena flow from the existing structure of the industry. If crude markets were made competitive, if they were made workably competitive, that compulsion toward vertical integration would be minimized. And they overlook the fact that reorganization itself would change their set of incentives.

Senator ABOUREZK. Now the staff economist on the antitrust subcommittee, Mr. Measday, has some questions prepared that he would like to ask at this point.

Dr. MEASDAY. Thank you, Mr. Chairman.

Dr. Scherer, can we say that to the extent that some firms are vertically integrated and some are not, that increasing the security of supply for the vertically integrated firms actually reduces the security of supply and increases the risks for the nonintegrated firms?

Dr. SCHERER. Except in special situations, like a couple that Mr. Mitchell identified, I think that is true, yes.

Dr. MEASDAY. What would be these special situations?

Dr. SCHERER. Well, for example, where a refiner is almost sitting on an isolated crude oil deposit. But other than that, I think it is true that when a large fraction of the crude oil supply is controlled by a few companies, that makes life much more perilous for those who do not have integration.

Dr. MEASDAY. Now could we turn to your discussion in your prepared statement on the differences between your findings and Bain's?

Dr. SCHERER. Yes; I skipped over that in my oral testimony.

Dr. MEASDAY. Right. But working in about 1950, Bain found that there were no advantages to, no economic efficiencies of, multiplant refining operations, while you did in your study. But you also shared

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[14] H. C. Eastman and Stefan Stykolt, *The Tariff and Competition in Canada* (Toronto: Macmillan, 1967), pp. 311–313, and 56–57.

[15] C. PPratten and R. M. Dean, *The Economies of Large-Scale Production in British Industry* (Cambridge: Cambridge University Press, 1965), pp. 83–96. A survey of other estimates is included by the authors.

[16] *Economies of Scale in Manufacturing Industry, op. cit.*, pp. 33–36.

his judgment that where crude oil functions competitively, your finding would probably be about the same as his. If we take FTC and census data, there has been a substantial increase in concentration of crude production, I believe, from the four largest companies from 21 percent to 55 percent to 34 percent, 1973, for the 20 largest; from 56 percent in 1955 to 76 percent in 1973. Now, in your judgment, is it likely that such increases in concentration has had significant effects on the competitiveness of the market?

Dr. SCHERER. I think those increases in concentration interacting with some other things like the prevalance of joint ventures, combined with a gradual tightening of crude oil markets as our domestic reserves became depleted, have, in fact, contributed to the increasing peril of nonintegrated refineries.

Dr. MEASDAY. Right; since refining concentration has not increased, does not change to any great extent over that period, this clearly results from an increase in vertical integration.

Dr. SCHERER. Well, it results from an increase in vertical integration, which results, however, from something more fundamental: namely, the fact that it used to be cheap to wildcat for oil onshore, and lots of small operators were able to do it. As, however, the main sources of supply have shifted offshore, and in combination with the risks created by a bonus bidding system, all but the big fellows have been excluded, and this has led to much higher concentration of our offshore oil than our onshore oil. That, in turn, has led to an increase in concentration generally of crude oil supplies.

Dr. MEASDAY. I think it is worth emphasizing this point that you have made here.

When we talked about the high risks of offshore exploration and development, the recent classic case was the loss of nearly $650 million by the Exxon, Mobil, and Champlet group. But this was $632 million in bonuses and about 14 million in dry holes.

Dr. SCHERER. That is right. We have some average data for 1973 that show that for every dollar spent on exploration in 1973, the company spent $10 for bonuses offshore.

Dr. MEASDAY. This is wonderful data, because it is what I have been looking for.

Dr. SCHERER. That is where the risks lie. The system creates those risks and the system can be changed to reduce those risks.

Dr. MEASDAY. In other words, I think it is worth stressing when we talk about the tremendous risks of the frontier, many of the risks which have existed so far have been from the bidding system?

Dr. SCHERER. That is right.

Dr. MEASDAY. Rather than the actual course of exploration and development.

Dr. SCHERER. Now, if you have to go into that kind of a roulette game, the way it is presently structured, you have to be big, or in a joint venture, to bear those risks. But there is another way of playing the game.

Dr. MEASDAY. Precisely. Let me try to go over your two-stage bidding system. Basically, in the first stage, you would have an award of a carefully designed exploration supervisor, exploration program, for an area to the company which would do it for the lowest price, right? It would be a carefully planned supervised exploration pro-

gram. There would be standards set for the type of geophysical work and seismic work that would have to be carried out in the amount of drilling and so forth.

Dr. SCHERER. Well, not exactly, Dr. Measday. It would be supervised in the sense that one could not get a permit to drill without having made certain environmental protection assurances. Other than that, though, I believe in the most chaotic system possible, because the way you find oil when you do not know what is out there is to have a diversity of explorers looking with as little restraint as possible, except environmental protection restraint. In that sense, it would not be carefully planned. It would be the opposite of carefully planned. The best way not to find oil is centrally to plan carefully for the exploration for oil.

Dr. MEASDAY. I think this goes to a point which Mr. Bain continuously makes and that is, chaos in a lot of markets may be far better than order.

Senator ABOUREZK. While you are on that point, Walter, I wonder if I might ask a further question. Would it also be beneficial in regard to leasing of Government lands, which is about what we have left, if even going beyond the known quantity of oil through your exploration method, if a large front-end payment were not required, it could be done on a royalty system to the Federal Government so that it would assure the ability of smaller companies to come into oil leasing?

And further, if there were some kind of a limit on any one company controlling a quantity or percentage of those leases, so that we would assure that smaller and a greater quantity of oil companies came in to drill and produce oil?

Dr. SCHERER. Well, you raised two points, Senator. On the first, the royalty bidding system does have the advantage of making entry much easier for small explorers. It has a disadvantage, however, too. If there is a vigorous bidding situation and the royalty bids are bid up high, say, to about 80 or 85 percent, and then if one strikes oil, but it turns out not to be as rich a deposit as one originally hoped for, the explorer may abandon the deposit, finding the amount of royalty he has to give out to be so high that it does not justify the production costs. So royalty bidding has the disadvantage of encouraging initial or premature abandonment of marginal deposits. And that is not always a very good idea. It was to get around this deficiency of royalty bidding that we devised our proposed two-stage bidding system.

Senator ABOUREZK. Had you thought about a sort of diminishing royalty system which would take care of that?

Dr. SCHERER. That is one way of getting around the problem. It is very difficult to administer, however. The problem is deciding when it should diminish, and into that all sorts of irrelevant influences might intrude. I do think, however—to answer your second question—that if you make entry into the crude oil exploration business easy by developing a system that minimizes or reduces the front-end risk, you really do not need to worry about your second problem; namely, imposing constraints on the amount of oil that a given concern can find, because there will be plenty of entries that will keep the industry fluidly structured.

Senator ABOUREZK. Do you think if you allow, first of all, free exploration by anybody in these areas, then a second-stage bidding process on oil already discovered, that even small companies could go to a bank and get enough capital? It would not prevent them, as they are prevented now, from getting the capital required?

Dr. SCHERER. If you have title to a tract that has, according to the well logs, 30 million barrels under it, you can go to any bank in the country and raise the money you need.

Senator ABOUREZK. Mr. Bangert just pointed out that that is important. We have been told, by various oil companies, that one of the great advantages of vertical integration is that it provides the full faith and credit of that great oil company in order to get money for those kind of things.

Dr. SCHERER. Well, oil in the ground creates a lot of full faith and credit, also.

Senator ABOUREZK. Yes, it does. Dr. Measday?

Dr. MEASDAY. Thank you, Senator. You mentioned pipelines very briefly in your prepared statement. And, again, witnesses have assured us that all the major company-owned pipelines are, in fact, true common carriers. They earn very low rates of return. In fact, I think Professor Mitchell suggested that the major companies are subsidizing the pipeline industry for the benefit of nonowners. But, on the basis of the FTC complaint and, I presume, FTC study, I gather that there is some doubt that shipper-owned carriers always act as true common carriers in the simple sense of the term. Would you care to comment on that?

Dr. SCHERER. My guidelines today are that I am not supposed to talk about FTC experience. I did get into the pipeline question to some extent in the research I did before joining the Federal Trade Commission. And we found that that was somewhat of a problem for the smaller refiners. Typically, they found themselves compelled to buy into the pipeline in order to assure that they would get equal treatment or that they would not be charged an excessive price. We found a couple of exceptions, but generally they were able to buy into the pipeline if they wanted to. So, yes; there was somewhat of a problem there. And clearly, the system of regulation is distorted because the allowable amount of profit is related to the total capital, and that encourages the pipeline companies to leverage the financing of their pipeline operation as much as possible so that they can maximize the return to their equity capital. I also learned something about this because a colleague of mine at Harvard, many years ago, wrote his doctoral dissertation on the oil pipeline operations, and he found some very serious problems.

Dr. MEASDAY. Is it fair, though, to look—if you are looking at the company's own investment in the pipeline—at simply the return on equity, as we have done? We find, for example, that in 1973 the average ICC line earned something like 17 percent on stockholders equity. Witnesses have told us, though, that this is a wrong way to do it; we should look at the return on the whole line, which is very low. Do you have any reaction to that?

Dr. SCHERER. At the very least, I would never simply look at the profits on the total amount of capitalization. If one is to do that kind

of thing validly, one must, at the very least, add in the interest payments along with the profit and relate them to the total amount of capitalization. You can at least make a case for that. On the other hand, to the extent that a pipeline is a sufficiently secure investment that one can leverage it highly, I still think the profit return on equity capital is a very relevant variable to analyze.

Dr. MEASDAY. Just one more question, Professor Scherer. Another point that a great many witnesses have made is that, over a number of years, the rate of return on equity or on assets for the major oil companies has been just about the average of all manufacturing. They point out that this is sufficient proof, in itself, that markets must be adequately competitive. Now, is it necessarily true, then, that you have to find excessive profits in order to find inadequacies in competition?

Dr. SCHERER. That is partly an economic question, partly a legal question. I will stay out of the legal area. As an economist, I would say no, that is not necessarily a demonstration. Consider the airline history. We all know that because of regulation, it is not a very competitive industry. It is not a very price-competitive industry, that is. And yet, given the level of prices that has been fixed, a lot of other things then happen, the service increases, the rate of capacity utilization goes down, and that wipes out what might otherwise be the profits associated with noncompetitive pricing. Professors Kahn and Dirlam make a fairly convincing case that the same thing has happened in the petroleum industry.

Specifically, at the crude exploration stage, the prorationing system created incentives to overdrill and to put too much capital into drilling, so that the returns were essentially brought down to a lower level than they needed to have been, given the noncompetitive character of the system. Similarly, at distribution, it is fairly clear that there had been, during the fifties and sixties, overexpansion of gas stations, so that the typical major branded gas station was operating at a low rate of capacity utilization. That inefficiency also brought down the returns that otherwise would have been there.

Dr. MEASDAY. Just one more question. The subcommittee has heard from industry witnesses some pretty horrendous estimates, in the billions of dollars a year—in fact, I believe one major oil company witness estimated $14 billion a year—as the cost of divestiture. Now, you estimate, just from the standpoint of multiplant efficiencies, three-tenths to six-tenths of a cent per dollar of sales, wholesale sales.

Mr. CHUMBRIS. But that was only one item, was it not?

Dr. SCHERER. On capital only.

Dr. MEASDAY. Right, just on capital.

Dr. SCHERER. Which would be the main one, if you had a competitive crude industry.

Dr. MEASDAY. Right. Yesterday, Professor Erickson estimated the losses from divestiture in the same direction, I think, primarily as capital losses at $500 million a year at 1974 prices.

Now, if you convert this to quantities produced in that year, it is about the top or a little above the top of your range, but it is still in the same ballpark. His position, however, is that this would be a deadweight loss, with no benefits at all offsetting the loss. Am I correct in interpreting your summary to say, on the other hand, that gains in

competitive performance might very easily offset the costs which might result from divestiture?

Dr. SCHERER. First, I have not seen Professor Erickson's testimony, so I cannot comment on its validity. Second, I think there would be some gains that would result from divestiture. One would be some enhancement of competition, although I might note that now the domestic crude price, absent regulation, would, in effect, be set by the price of imported oil. So that affects, to some extent, the gains one might realize. There would surely be gains in terms of the vigor of competition. I should note that my estimates of the advantages of multiplant operation assume that the multiplant firm is, in fact, able to wring out of its opportunities all the advantages that might be there. That does not always happen. Sometimes firms behave sluggishly and do not take advantgae of all their opportunities.

I think that a restructured industry would probably be more vigorously competitive, would squeeze out more layers of fat, and that, too, would be an advantage.

And finally, there would be a whole set of political and social advantages which one cannot evaluate in dollar terms, but which are certainly of appreciable magnitude.

Dr. MEASDAY. Well, I am going to get into one more question on these, speaking basically of social advantages. How about the argument that we need the big oil companies to carry out the research and development necessary for alternative fuels, which we will require if we are going to survive in the next 50 years. Are there other ways of getting this R. & D. carried out?

Dr. SCHERER. That is an argument which I cannot address specifically. We presently have a study at the Federal Trade Commission on what kinds of companies are the most vigorous participants in research on new fuel technologies, and I just have no idea what the answer is going to be. Quite generally, however, research thrives best with a diversity of sources. There may be situations where high concentration or very large firm size is necessary before research on very costly, high-risk activities will be forthcoming.

I might note, however, that the companies that would emerge from a reorganized petroleum industry, by any stretch of the imagination, would be rather large companies. I cannot speak to every possible case, but in most cases they would be quite able to pursue research. We found in our multiplant studies, which did not get into the question of wholly new fuel technologies, that in general, size was not a very important advantage in terms of doing research and development in traditional petroleum technologies.

Dr. MEASDAY. Thank you very much. I have no further questions.

Senator ABOUREZK. Dr. Scherer, I wanted to ask you about that pipeline dissertation you talked about just a minute ago. Do you have a copy of that that you could submit for the hearing record?

Dr. SCHERER. To the best of my knowledge, I cannot. These were two dissertations written at the Harvard Business School, submitted, I think, in 1963. We tried to get copies a year or so back, but they are sequestered. They are not available.

Senator ABOUREZK. Was that while Henry Kissinger was at Harvard; is that why they were made so?

Dr. SCHERER. No, Senator. The data were obtained from various pipeline companies, and I guess the dissertations contained some data that the companies did not want released. So they are not publicly available.

Mr. CHUMBRIS. I am glad you made that statement, Doctor, because Dr. Measday tried to ask a similar question of one of the witnesses last week, and he said he could not give this particular thesis because he did it under a situation where it was supposed to be kept confidential. I am glad you said the same thing.

Dr. SCHERER. Well, yes, one of the authors was my research assistant for a while, and I know the difficulties he went through trying to get the dissertation cleared.

Senator ABOUREZK. Dr. Scherer, I personally have to go downstairs to the wiretap meeting. We are undertaking final markup on the report, and I have to be there. But you are going to continue because there are some other questions. I am going to ask the staff to continue the hearings until you are finished. Mr. Chumbris has some questions and some of the other staff may have.

I want to personally express my thanks to you for an excellent presentation, well researched, well documented and well presented.

Dr. SCHERER. You are very welcome, Senator.

Dr. MEASDAY. Could I ask one more question? This is on the matter of dissertations. Is it not a little unusual, though, that a dissertation, which presumably is a contribution to knowledge, should not be available for study by either other scholars or people concerned with the making of public policy?

Dr. SCHERER. As a scholar, I considered it outrageous. But I am told that it has been done in a number of instances. It is a difficult tradeoff between getting the kind of data one needs to do a dissertation on the one hand and the traditions of scholarly openness on the other hand.

Dr. MEASDAY. For the record, of course, the subcommittee tried to get access to those dissertations, too, and was denied such access.

Mr. CHUMBRIS. Dr. Scherer, for a moment there—and I knew Senator Abourezk had to be at the 10 o'clock meeting—I was afraid that my good friend, Dr. Measday, was conducting a filibuster, so the minority would be denied the privilege of getting into a few colloquies with you.

Dr. Scherer, as the chairman stated, your reputation is well-known, and I think that is evidenced primarily not only because of your previous scholarship in the professional world and with the FTC, but because you were selected as one of the key spokesman before the Airlie House Columbia University Conference meeting several years ago, when you discussed the subject you are talking about today. And, at the same time, in order to give the best type of presentation, this particular conference had a one-on-one; you spoke one side and Dr. John McGee spoke on the other side. Other issues also had a spokesmen for each side of the question.

So there is another side to this question of cost and the question of efficiencies and economies of size. And Dr. John McGee gave his side. I want to read just one paragraph here.

Economists do not always agree. Among other things, they disagree about the causes and significance of industrial concentration. And, as this conference demonstrates, what one hears depends significantly upon who one listens to, which one would think, might retard the tendency to cook up hasty policies. Some economists' disagreement stems from the differences in their theories, which, in turn, have influenced their perceptions of reality. Such differences in theory would lead to the request for different kinds of facts, different appraisals of feasibility and relevance to the various kinds of empirical studies and to different predictions, explanations, and appraisals of observed economic outcome. In addition, economists' theories also differ because they have had different kinds and amounts of experience in the world outside.

Now, I do not think this applies only to economists. I think that applies to everything that we have done here in the last 20 years on this subcommittee. My good friend, Chuck Bangert, and Mr. Banta and Dr. Measday, from their point of view, and I and Gary Vaughn and Charlie Kern, on this side of the fence, when we look at an issue, we look at it not only from our respective minority and majority points of view, but sometimes also within the Democratic and Republican sides, with their different philosophies that they have. We try to make a record so that any one of a hundred Senators on the Senate floor may find some facts and some theories which they may make use of it in their debates. And if we had Dr. McGee here at the same time that we have you here this morning, he probably would take exception to some of the conclusions that you have made, as he did at the Airlie House Conference, mentioned earlier.

On the question of 1 percent that you mentioned—and then you also had a figure that it could be 2 to 5 percent also, depending upon whether we are talking about moderate or meager in your paper—when you stop to think that Exxon, alone, has 1.25 billion barrels of refined products in a given year—and I am taking that from the testimony of Exxon's chairman of the board in our 1969 hearings. He stated, "Refining is divided somewhat the same way." First he talked about production, then "Jersey has a total of worldwide refining capacity of 4,600,000 barrels a day, of which 1 million barrels a day is in the United States. Marketing is somewhat on the same basis." Now, then, if you go to all 20 corporations that are also refining, and figure out how many barrels a day and what the price of that product would be, a 1-percent cost saving or a 2- to 5-percent cost saving, as you stated in your paper, would amount to an awful lot of money—billions of dollars—would it not?

Dr. Scherer. Yes, it would.

Mr. Chumbris. And that is why they got into these efficiencies in the first place.

Dr. Scherer. Of course, it would amount to a large absolute amount of money. One percent on the sales of the petroleum industry is a whopping big amount of money. It should, it seems to me, first of all, be looked at in relative terms, and in relative terms it is a rather small amount, even in the worst case, which is what I was trying to present.

Second, it should be noted that most of that additional cost, if the petroleum industry were reorganized so that there were competitive crude markets, would be in the way of higher capital costs.

I see you have read the Airlie House proceedings. You will see that John McGee and I had a rather scrapping debate over the question of what the social significance was of higher capital costs.

On the one hand, Exxon reorganized, would pay a little bit more money for its capital. On the other hand, some investor in Exxon would have a little bit more money from having bought shares of that reorganized corporation.

As a first approximation, that is a transfer from one group in society to another group in society. As a second approximation, there are elements of risk associated with that premium, and economists really do not have an adequate theory for saying what the social significance is of a capital cost premium that is associated with higher individual risk. It is by far the toughest economy of multiplant operation to evaluate. And I admit, very openly, in the Airlie House proceedings that I do not know how to deal analytically with that question, nor does any economist, to the best of my knowledge.

Mr. CHUMBRIS. The only point I am trying to make is if you save 1 percent or 2 percent or 5 percent of total cost of refining alone, the savings reach billions, and to do the same thing for each segment of integration, production, exploration and development, refining, marketing, pipelining, and add all those together, then it would help create profits and capital that an industry such as the petroleum industry needs to make it the great industry it is today.

And I think that that is the point that the witnesses have alluded to, and I am just trying to bring out what the witnesses, themselves, have stated as to why an integrated system is a great system. It is not only the system that we have in this country—oil and other key industries— but it is a system we have throughout the world. And if we disintegrate and dismember in this country, but other countries around the world do not do that, that is going to give our foreign competitors a tremendous competitive advantage.

Dr. SCHERER. My maximum 1 percent estimate assumes all such integration or pyramiding into the figure. That is to say, it assumed what the effect would be at the end of the product pipeline: namely, when you are delivering the refined product. So I do not think you could pyramid it into a larger sum by talking about separate stages.

Mr. CHUMBRIS. Well, I would not feel that you meant it all the way. But, anyway, that is good to have in the record. And, as a matter of fact, that is what these hearings are for. You may come up with a proposition and Senators and counsel may bring out something that detracts a little bit from your statement. And, then, another question may come up which would give you a chance to even add further to your original statement.

I have nothing further. I just wanted to bring out these points. Our economist, Garrett Vaughn is here, and he has a few questions he would like to ask.

Mr. VAUGHN. Dr. Scherer, have you looked at the wording in S. 2387?

Dr. SCHERER. Let me see. There have been so many of these bills floating around, I do not react very well to the numbers.

Mr. CHUMBRIS. That is the Bayh bill, Senator Bayh's bill.

Dr. SCHERER. 2387, was that?

Mr. VAUGHN. Yes, 2387.

Dr. SCHERER. Yes, I have it.

Mr. VAUGHN. All right. Well, in your statement, you seem to be anticipating a breakup at the refinery level. That is, a certain number

of refineries would be broken up into a larger number of refineries, is that true?

Dr. SCHERER. That is true. I am assuming a different pattern of reorganization than that which is contemplated in S. 2387. I am assuming, in effect, a matrix type of reorganization in which there is both vertical divestiture and horizontal divestiture; the horizontal divestiture being both at the refining and the crude production stages.

Mr. VAUGHN. So I would take it, then, that you are opposed to the divestiture as stated in S. 2387, unless it is supplemented with these other steps?

Dr. SCHERER. I think 2387 can be improved upon, yes.

Mr. VAUGHN. OK. Well, let me bring to your attention, in case you have not seen it yet, the testimony of Lewis Kruger, who appeared yesterday and who, I gather, is a lawyer with some experience in voluntary divestiture. He appeared to be knowledgeable about how firms go about divesting themselves, fall under a fulcrum situation and also did it because they feel it was in their best interest. In his prepared statement, Mr. Kruger had this to say:

> Certain portions of the business of the oil company to be divested might well be sold or exchanged in a typical corporate sale of assets or subsidiaries. If, for example, company A has determined to divest itself of its refineries, company B has determined to stay in the refinery business and is interested in company A's refineries, then it might offer to acquire company A's refineries either for cash or notes or equities. And, to the extent that equity was received by company A, it might distribute that equity among its shareholders.

Now, as I gather that scenario, he is trying to figure out exactly how all the legal instruments and ownership claims could be distributed among each other; that, if you had two companies, company A and company B, both in the refining business, at the end of this exchange only one company is in the refinery business.

If this bill would apply to 20 corporations and, let us suppose 10 sell their interest in the refinery business to the other 10, you have, at the end of it, 10 firms in the refinery end of it, which seems to me to imply that the net result of S. 2387 is to increase horizontal concentration, which, as I understand it, most industrial organization economists feel is the source of monopoly power, much more so than vertical integration. So, with that comment, how would you respond?

Dr. SCHERER. I am afraid the link which increased horizontal competition eluded me. As a first approximation, from a strictly vertical reorganization I would not expect any change in concentration at all. One can postulate all different kinds of scenarios. It seems to me the financial aspects of it are the kind of problems that reasonable persons could work out for a wide variety of different physical reorganizations. My preferred reorganization, if I were redrafting S. 2387, I would provide broad guidelines suggesting a reduction in concentration at the crude level to some target level, a reduction of the extent of multirefinery operation at the refinery stage to some certain level, and a suggestion that no major refining company be more than, say, 35 percent own crude self-sufficient.

That is to say, I would not advocate complete divestiture of crude production from refining. I would especially want to leave open the door so that the newly reorganized refining companies could go out, if they wanted, and risk their funds on developing new sources of

crude. I am not at all familiar with the testimony to which you refer, but I should think that it would be rather easy to carry out the splitting of shares, the reorganization of bonds and stocks, which would permit any such structure to come into being.

Mr. VAUGHN. Since you were not here yesterday, you did not hear the fireworks between Mr. Kruger and Senator Hruska, but certainly Senator Hruska found some problems in this restructuring of the ownership, the debt and so forth.

Dr. SCHERER. We split Standard Oil of New Jersey into more than 30 pieces in 1911, and the world did not come to an end. The Public Utility Holding Company Act somehow unscrambled some very complex corporate structures. When Du Pont was required to divest its interest in General Motors, there was dire predictions that the stock market would collapse. Nobody who has analyzed this has been able to find a perceptible effect. I suspect that good investment bankers would find a way of reorganizing the financial aspects of the companies without a great deal of difficulty. And, I suspect, at considerable profit to themselves.

Mr. CHUMBRIS. If Mr. Vaughn will yield on that point, you mentioned the 1911 Supreme Court decision. But, as Senator Hruska and witnesses have stated, there is a big difference between the *Standard Oil* case of 1911 and this one. In 1911, when the Supreme Court ordered the divestiture, what it did was separate a number of already existing integrated oil corporations. I think every one was integrated except Standard of Kentucky. The Court divested them in a way that they would be geographically located. The mechanism was already there for a continuing corporation. Whereas, here, you are dismembering the production, refining, pipelining, and marketing, which was not done in that same sense in the 1911 situation. And another fact that you have, in 1911 we had an entirely different type of economy than we have today.

A moment ago, you stated that it was easy to be able to borrow. But it was not very long ago that the public utilities and the gas and electrical companies had a difficult time of going to the banks and borrowing the money they needed at a very, very critical period. And I recall very well that the chairman of the Public Utilities Commission of Michigan came down to Washington to talk to Members of Congress to see if a bill could be introduced which would have the Federal Government set up a particular loan fund so that these utilities could borrow money to help them in that crisis.

And these ads that you see in some of the papers about the difficulty of raising this money; the ads noted: Where are you going to raise the billions of dollars? As a matter of fact, I think Secretary Simon was quoted as saying that the oil industry will need $4 trillion between now and, I think, 1985 to be able to meet the energy needs of this Nation. So the 1911 situation, according to the witnesses who have testified, and in Senator Hruska's very strong opinion, is in no way a comparison with the problems that S. 2387, if enacted, would place upon the oil industry, and this Nation's economy and security.

Dr. SCHERER. The problem would certainly be more complex than the 1911 divestiture for the reasons you pose. But remember, what we would be creating here would be a group of surviving billion-dollar

or multibillion-dollar corporations which, I suspect, would be quite able to fend for themselves in a tight capital market among a lot of other billion-dollar corporations, as well as many corporations which are much smaller than a billion dollars.

Mr. BANTA. Let me correct a misstatement here. I would like to recommend to the minority counsel the volume 2 of the Official History of Standard Oil. Chapter 1 of that volume is entitled "Dismemberment." It lists in there the 36, I believe, corporations which were taken off of the Standard Oil Corp. of New Jersey, and it describes in there the degree of vertical integration of those corporations. And the point made with great anguish in that chapter is that none of them were vertically integrated by the time the Supreme Court was done with them.

Mr. CHUMBRIS. Well, you may say a misstatement. When I am trying to review in 2 minutes a Supreme Court decision that runs about 100 pages, I am not going to be able to cover every little facet of that decision.

Mr. BANTA. It is a short chapter.

Mr. CHUMBRIS. As a matter of fact, in the recent hearing we had with Senator Abourezk, I asked the chairman to put the entire Supreme Court decision into the record so it can speak for itself. So all I am repeating here is what has been said by Mr. Bator and what the colloquy Senator Hruska had with Mr. Bator was, and if my good friend Banta wants to go through that and picayune a phrase or two out of it that might be in disagreement with him, God bless him.

Mr. BANGERT. Maybe we should get this back on the track.

Mr. Vaughn, do you want to continue the questions?

Mr. VAUGHN. Yes, thank you.

Dr. Scherer, after you gave your vote of confidence in the investment banking community, if we are to avoid increasing concentration at each level—the refinery level or whatever—will we not have to, as well, reshuffle the bonds and stock around with great care, also have to come up with some additional management talent?

That if, let us say, Texaco and Exxon are to avoid selling, let us say, the refineries from Exxon to Texaco and then the crude oil from Texaco to Exxon, so that we have half as many firms in each state of business as we had before, new management, new resources will have to be flow into each sector so that Texaco can then sell some of their refineries to an outside group. Would not that have to take place?

Dr. SCHERER. Well, of course, you do have management at all stages of the present petroleum industry: there are plant managers; there are field managers; there are regional managers; there are group vice presidents. The key issue here is, could a group vice president grow to become, say, the president of a now independent refining company or a now independent production company?

I have met quite a number of these middle level managers. I am very favorably impressed by their abilities. I think they could grow into that larger role. I may be wrong, but I think most of the large petroleum companies have management in depth that could, indeed, adapt to the challenge of running, on their own, a company.

Mr. VAUGHN. Do you suppose they all could be found in 3 years? Could they all be found in the timeframe stated in S. 2387?

Mr. SCHERER. Adam Smith once wrote that the human baggage is the most immobile of all commodities, but I think that, in 3 years, human beings can make some very large adaptations. And I would be very surprised if good management did not emerge from such a reorganization. We have seen it so many times in connection with merger divestitures. The FTC had a case a few years back—involving, I think it was Georgia Pacific Lumber—and spun off a new company. I am told the management of that new company thrived on the challenge of running its own show, rather than being subordinate to a corporate headquarters.

Mr. CHUMBRIS. But that situation that you are just mentioning is in no way in comparison to these 20. I would like for you to read the colloquy between Senator Hruska and Mr. Kruger yesterday, and also his colloquy with Mr. Bator and Mr. Gary who testified on Tuesday. And then you can see what concerns Senator Hruska, as a Senator, and why this divestiture bill is so far different than anything that we have, because Mr. Kruger went through a history of various divestitures and he enumerated them. And then after Senator Hruska had the colloquy, Mr. Kruger had to admit that all he was talking about there is a legal precedent for divestiture, but when it comes to the practicality of the divestiture, Mr. Kruger admits the oil divestiture under S. 2387 was in a class by itself.

Dr. SCHERER. There is no question, it is a tough job. But I also think the petroleum companies have very able executives who would rise to the challenge of creating an efficient reorganized petroleum industry. I have talked to a lot of them and I am very impressed by their ability.

Mr. CHUMBRIS. I think what Mr. Vaughn was pointing out, the 3 years, was the fact that in the *Loews* case I think it took 7 years whereas they were supposed to do it within the 2-year period. In the Public Library Utility Act of 1935, the law was not declared constitutional for a number of years, and the record will speak for the exact number, but the testimony was that the very final divestiture that took place under that Public Utility Act of 1935 was in early 1960. So it was from 1935 to 1960 before all of the divestitures required by that law were finally taken into effect. You mentioned FTC, but you have the famous Detroit oil case that was started in 1940 and it was 1957 that it went to the Supreme Court, and then it went back to you. And then I think it was in 1960 before that case was finalized and that was only a price discrimination case, good faith defense, which had nothing to do with divestiture.

Dr. SCHERER. One of the great laws I have learned since coming to Washington is that in any law proceeding, everything takes three times as long as was expected.

Mr. CHUMBRIS. Thank you. I yield back to Mr. Vaughn.

Mr. VAUGHN. Well, the point I was trying to come to was that either we have to find four times the number of excellent managers than we already have or else we are going to face an increased concentration at each level of the business platform. If Texaco, for example, does not sell its refinery assets to Exxon in return for, let us say, Exxon's crude resources, then this new firm to whom Texaco is selling has to come up with this management. Now, this management

has to come from somewhere. So if you are going to take 20 large corporations and break them up into 80, that means we now have four times the management.

Dr. SCHERER. Top management.

Mr. VAUGHN. Top management, all right. So even though the top management of Exxon is excellent, let's suppose, we still have to find three more excellent people. And where are they all to come from when breaking up what amounts to almost the entire industry, and where is this extra talent going to come from? I can conceive if you break up one firm through a court ordered divestiture there is still a large majority of the industry from which it can draw upon the talent to operate the firm. But how is this going to happen in an entire industry being broken up?

Dr. SCHERER. It already exists, Mr. Vaughn. There is no way you can run a large complex, multibillion dollar corporation without substantially decentralizing management responsibilities. As a result, the major petroleum companies already have regional group and functional executives who have a considerable degree of autonomy. There is just no way that they could function efficiently if they did not so decentralize. What one would simply have is a further decentralization that would break the umbilical cord completely to the corporate headquarters.

Mr. VAUGHN. I am gratified that you are so confident on that point. Let me move on to your remarks about the bidding system and the tax situation and the depletion allowance and so forth, and that these tend to encourage vertical integration as I gather from your statement. But aren't these really Government policies, and Government policies can be changed so that if you reform the Government policies —we have already reformed to a considerable degree the depletion allowance and, of course, the bidding system could be changed by Government action—why then must we have divestiture if we have these Government policies reformed?

Dr. SCHERER. I think the matter has been improved significantly already by the elimination of the percentage depletion allowance. There has been a substitute—not exactly a substitute—but another change that maybe has made things worse; namely, very intricate regulation of the petroleum industry. But I think if that were removed, you would find things working better already. I think there would be a still greater improvement if some of the unnecessary risks in crude oil exploration were eliminated by changes in Government policies. The key issue, it seems to me, is whether those changes go far enough or whether you need still another step: namely, some structural reorganization, in order to restore the assurance of competitive market conditions to these crude oil and refined product markets. I'm sure that different people will reach different judgments on this, but I believe we would have a better assurance of vigorous competition with some structural reorganization and some changes with respect to the allowability of joint ventures among major petroleum companies.

Mr. VAUGHN. Now, assuming that restructuring the bidding system, and so forth, of the Outer Continental Shelf and its hard-to-get-at places for new or improved supplies, that this would result

in a pretty competitive crude market, that it would allow the small firm to enter that market, assuming that—I am not trying to indicate that I agree with it—it is so, then as I gathered from your paper, there would be very little incentive, if any, to maintain integration if there is a workably competitive input market, and a lot of the rationale and advantage to integration disappears.

And if I read your historical record correctly, the refinery business has not been all that profitable. Would we not expect voluntary divestiture to occur over the long term? If you are correct that a workably competitive crude market will emerge, the corporations would find it in their best interest then to spell out these rather unspectacular refining operations, unspectacular profits, and we would have a voluntary divestiture occurring through market forces. We would not need the Government to enter in, and we would not have to run the risk of the Government lousing things up as the Government is quite prone to do on occasion.

Dr. SCHERER. Well, I suspect one would see gradual changes in the structure of the industry. The petroleum industry, however, is a durable, capital type industry, as, say, the steel industry was. So it would take a long time for these changes to take place, just as it took 50 years for United Steel Corp.'s market share to drop from 65 percent to 23 percent or so. The first question is, is it necessary to wait so long to get these changes? I do not believe it is necessary, and I think some vertical divestiture would also improve the functioning of the crude market, so that would be a desirable step.

Mr. VAUGHN. Well, of course, what you just said I guess assumes that the Supreme Court will agree—if this legislation ever gets passed —that it is constitutional and that its litigation period is relatively short.

In any event, we are supposed to run out of crude oil in the year 2010 or whatever it is. Maybe we will just run out before we ever get divested. That will be the end of my statement.

Mr. BANGERT. Dr. Scherer, thank you very much.

The subcommittee will meet again next Tuesday at 9:30 a.m. in this room, at which time we will hear Mr. Anthony Sampson and Mr. Stanley Ruttenberg.

[Whereupon, at 10:31 a.m., the proceedings were recessed, to reconvene on February 3, 1976, at 9:30 a.m.]

VERTICAL DIVESTITURE IN THE PETROLEUM INDUSTRY

TUESDAY, FEBRUARY 3, 1976

U.S. SENATE,
SUBCOMMITTEE ON ANTITRUST AND MONOPOLY
OF THE COMMITTEE ON THE JUDICIARY,
Washington, D.C.

The subcommittee met at 9:30 a.m., in room 2228, Dirksen Senate Office Building, Hon. John V. Tunney presiding.

Present: Senators Tunney and Abourezk.

Staff present: Charles E. Bangert, general counsel; Henry A. Banta, assistant counsel; Walter S. Measday, chief economist; Patricia Y. Bario, professional staff member; William E. Kovacic, staff member; Catherine M. McCarthy, chief clerk; Peter N. Chumbris, minority chief counsel; Garrett Vaughn, minority economist; Charles E. Kern, staff member of Senator Fong.

OPENING STATEMENT BY JOHN V. TUNNEY, U.S. SENATOR FROM THE STATE OF CALIFORNIA, MEMBER, SUBCOMMITTEE ON ANTITRUST AND MONOPOLY

Senator TUNNEY. Today we are concluding another round of hearings on the oil industry. These 7 days of hearings, which have focused on bills designed to break up the vertical structure of the oil giants, form only a small part of the comprehensive record compiled over the past 10 years in various congressional forums.

In this subcommittee alone there have now been 106 days devoted exclusively to the structure and marketing practices of the petroleum industry, a figure that does not even include the attention given to this industry in the course of the massive hearings on administered prices and industrial reorganization acts.

The record to date has moved many of us in the Senate to introduce legislation to improve competition in the energy market. On December 9, 1975, I introduced S. 2761, the Competition in Energy Act. My bill, to put it simply, would get the major oil producers out of the business of refining, transporting and marketing petroleum products, thereby encouraging greater competition within the industry and lower prices for consumers.

S. 2761 also addresses the increasing control enjoyed by the major oil companies over the development of alternative sources of energy. It prohibits the oil companies from owning alternative energy resources, if they fail to develop them.

The record shows an alarming degree of concentration within the energy industry. For example, three major oil companies control over 90 percent of the oil and gas reserves on the north slope of Alaska. Within district 5, which includes California, eight major oil companies account for 70 percent of crude oil production, 76 percent of refining capacity, 80 percent of marketing facility, and 99 percent of crude oil transportation facilities.

In terms of horizontal concentration, oil companies already own more than 35 percent of the existing coal reserves and five oil companies are among leaseholders who control 70 percent of the recoverable coal deposits on Federal lands.

Oil companies already control more than 50 percent of the country's uranium reserves, and the key stages of uranium refining and processing are controlled by the oil companies.

A classic example of how horizontal expansion by the oil giants can adversely affect the consumer is found in the geothermal fields of California, where the price for this potentially cheap source of energy is, strangely enough, under contract, tied automatically and directly to the prevailing price of oil.

The economic costs of excessive concentration have staggered. The Federal Trade Commission estimates that American consumers pay as much at $80 billion annually for this portrayal of the free enterprise principle.

Other economic costs that have been linked under concentration include inflation, recession, unemployment, environmental deterioration, periodic shortages, misallocated capital and other interferences with the operation of the free market.

Government regulation has failed to relieve the problems to any significant degree. Indeed, Government regulation seems to produce chiefly, negative effects, the growth of unwieldly bureaucracies, an unholy alliance between the regulators and the regulatees, in which high profits and foreign bribes are tolerated, if not condoned.

The simple fact is that our largest multinational corporations, and particularly the oil giants, have become sovereign States accountable to their own self-serving interests.

One of our witnesses today, Anthony Sampson, has spent the past few years investigating such sovereign States and has, most recently, written "The Seven Sisters", which documents the history and current behavior of the collusive arrangements between the largest oil companies and the producing countries.

Our other witness, Jesse Calhoon, is president of the National Marine Engineers Beneficial Association, an association that has established a number of studies of the oil industry: the latest being: The Energy Cartel, Big Oil Versus the Public Interest.

Following the hearing today, the Antitrust and Monopoly Subcommittee hopes to move immediately to its final consideration of divestiture legislation. Let there be no misunderstanding about the seriousness of our endeavor. We are considering nothing less than the total reorganization of one of our most important enterprises.

If this legislation is enacted, then we will have reaffirmed, in my view, our faith in the free enterprise system and our traditional belief that no private concentration of power should grow so large that they are beyond the reach of democratic, civil government.

In short, we will be making an indelible statement about our fundamental values about the kind of society in which we wish to live.

Senator Abourezk has legislation on divestiture, too, which has been before the committee for quite some time. Senator did you want to make a statement?

Senator ABOUREZK. Thank you. No, only to welcome Mr. Sampson to the committee hearings and to state for the record, as you did the other day, that I think it is Standard Oil of California that is recording these proceedings on tape for the benefit of the record, the witness, and public. It should be good to note that.

Senator TUNNEY. Thank you. I just learned that Senator Durkin is here. Mr. Sampson, would you mind giving Senator Durkin the opportunity to testify first so that he can go to his hearing that he has to conduct?

Mr. SAMPSON. Fine.

Senator TUNNEY. Thank you.

STATEMENT OF JOHN A. DURKIN, A U.S. SENATOR FROM THE STATE OF NEW HAMPSHIRE

Senator DURKIN. Mr. Chairman, I can testify to the popularity of Mr. Sampson's book, because someone in the office lifted my copy of it. [Laughter].

Senator DURKIN. Senator Tunney and Senator Abourezk, with me this morning is John J. Warren, an individual from Manchester, New Hampshire, who has experienced firsthand the tender and compassionate hand of the oil industry, and I will let him detail his experiences. I think they add a dimension to the hearings.

I am here for several reasons. First, I think any legislation involving the divestiture of oil industry cannot overlook the role that Senator Philip Hart of Michigan has played. And I think I would be remiss if I didn't add my statements to the record, reflecting the praise and the admiration that we all hold for Senator Hart. He has been out front on so many issues.

Senator Hart is one of the reasons that I ran for the U.S. Senate, one of the reasons I am here today, and, hopefully, we can get this bill out on the floor and passed and override the inevitable veto, before the end of this session, before Senator Philip Hart, retires.

I am not here as a technician and I am not here as an expert on the intricacies of vertical integration, but I think Hughey Long, some 40 years ago, said, "You cannot let the man that owns the hole in the ground own the transmission line as well."

Well, today, we have gone far beyond that. They not only own everything from the well to your gas tank, but had one of the majors been able to buy the CNA Financial Corp. or Montgomery Ward, they probably would be selling you the auto insurance, financing the car and selling you the seat covers, as well.

That undue concentration of economic power scares me. And I think it should scare the entire Senate.

You have probably seen the weather pictures. My constituents in New Hampshire are freezing and boiling at the same time. They are freezing in very cold weather conditions today, but they are boiling

because we in New Hampshire and New England pay the highest energy prices in the country.

I am sitting here as a U.S. Senator today because of the oil industry, because of the high oil prices in New England. My constituents are fed up. They are fed up with all the pious pronouncements; they are fed up with all the polysyllabic baloney. I understand there are some 40,000 pages of testimony, regarding divestiture.

People, my people, the people of New Hampshire, the people of New England, they want action, they want competition restored to the oil industry.

I could spend the whole day talking about the problems that face real people in New Hampshire, because of the undue concentration in the oil industry, but you know the record just as well as I do.

One of the major issues in my most recent campaign—President Ford campaigned a whole day against me—one of the major issues in that campaign was the price of oil and the recognition that the White House is owned and occupied by the oil industry.

It is interesting. We carried most every town in which President Ford campaigned against me and the one or two that we did not, we improved our margin over November 1974. And again, I think the root cause was oil and the price of oil and the perception that the oil companies and the Ford administration were working hand in glove.

You know, in the short time that I have been in the Senate, I have heard an awful lot of pious pronouncements of how the Senate and the Congress are concerned with the small businessmen and businesswomen of America.

Well, what we have here today is John J. Warren, who was a proud, self-reliant, small businessman, who was literally put out of business by the Citgo Oil Corp.

I am not going to read my prepared statement, Mr. Chairman. I ask that the full prepared statement be printed in the record to dispense with reading.

Senator TUNNEY. Without objection.

Senator DURKIN. But I think I would like to read just a few words.

> I am concerned that there has been in our country a riot of individualistic materialism, under which complete freedom for the individual turns out in practice to mean perfect freedom for the strong to wrong the weak.
>
> In no other country in the world have such enormous fortunes been gained. In no other country in the world is such power held by the men who gained these fortunes, and by the giant corporations which they control.
>
> The power of the mighty industrial overlords of the country has increased with gigantic strides, while the methods of controlling them or checking abuses by them on the part of the people throughout the government, remain archaic and, therefore, practically impotent.

Those are the words of Teddy Roosevelt and they are just as true today as they were in 1908, when he set them down in his autobiography.

I think we know antitrust litigation is not the answer. We cannot match the power and the agility of the oil octopus. So I do not think we should rely on litigation. I think legislation is the only answer.

As I said, Mr. Chairman, with me is John J. Warren, Jr. of Manchester, N.H. For 17 years he operated a two-pump service station on Elm Street under a leased proprietorship agreement with the Citgo Oil Corp. His annual volume increased steadily each year during

that period. His rent remained relatively stable; his relations with the company were cordial and friendly.

When Mr. Warren left the business in 1973, he was doing about $400,000 a year in gasoline sales and automotive service. He took home about $200 a week and worked an average of 90 hours for it.

In February 1973, Mr. Warren learned from the city building records, the city of Manchester building records, mind you, printed in the newspaper that the station he had operated for 17 years was soon to be torn down and replaced with a new three-pump station. It was the first he learned of the decision, which was to throw his life and finances in a disarray.

He telephoned the Citgo Boston office and was told by the low man there that he would, indeed, be put out of business, and that Citgo would operate its own grocery-store, self-service gas station on the same site.

On March 15, the Citgo field representative asked Mr. Warren to sign a release from his 1-year contract, backdate it to February 28. It seems to me someone else got in trouble backdating documents.

He signed the release for fear of losing a $2,500 dealer deposit the company had. And he signed the release, despite contractual obligations which should have protected him for at least 90 days after notification by the company that the contract would be terminated.

Mr. Warren's financial loss was about $8,000 from this abrupt and heartless change in corporate policy. With two children and a wife at home, he found that after 17 years of steady work, that few employers would now hire him because of his age. When he finally found a job, the starting pay was substantially lower. In winter, his take-home pay was cut in half for himself and his family, in half for the heat and electric bills which continued to rise because of the oil octopus.

In a few short weeks, Mr. Warren went from a proud, self-reliant businessman to an unemployed father, who could have qualified for food stamps. The story does not end there, however. During the next year, gasoline in New Hampshire was informally rationed by station dealers to customers waiting in lines two and three blocks long. Another Citgo dealer in Manchester complained to the Federal Energy Administration, which is a refuge for oil company—executives for the most part—that his supply of fuel was being cut back while the new company-owned store, Mr. Warren's old site, was plentifully supplied.

Mr. Warren cooperated with the FEA in supplying figures on his sales during the 1972 test period. The evidence seemed clear that Citgo was violating the law, he was told. But to date, the FEA has prosecuted no one. It may be no coincidence that the Boston office of the FEA is headed by a former oil company executive who served his former bosses well in several countries around the world. It also may be no coincidence that Mr. Warren was told by a Citgo representative that the dealer who brought the complaint will be out of business by the end of the decade.

Then, in April 1973, Mr. Warren was asked to appear at a committee hearing in the State House, where lawmakers were considering legislation to protect the independent service station operators.

Well, needless to say, the panel consisted of people who were either stockholders or in some way involved with the major oil companies, and no legislation was passed. Five of the dealers who testified are now out of business.

You know, we make great claims to be concerned with the small businessmen. We have here, another example of free enterprise for the small businessmen and corporate socialism, corporate welfare, if you will, for the big and powerful.

Also, you might be interested to know that since Mr. Warren was jilted into unemployment by the computer in Tulsa, the number of Citgo stations in Manchester has dropped from 6 to 2. The old Warren station with three pumps is doing twice the business at three times the profit for Citgo.

You might also note, Mr. Chairman, that when Mr. Warren started pumping gasoline in Manchester, he was charging about 22 cents a gallon. Citgo on the same side is now charging 53.9 a gallon for regular which is 5 cents beneath the price of the other dealers in town, including other Citgo dealers.

Because of the competitive price, Mr. Warren still buys his gas at the site he worked so hard for 17 years. Citgo's story is somewhat different from that of Mr. Warren's—it is in the record.

I would like to, at this point, introduce Mr. Warren, and let him tell you firsthand and maybe answer any questions that you might have because, as I say, we have the pious pronouncement that this never happens, but this is a real live person who suffered at the hands of one of the majors.

Mr. Warren?

STATEMENT OF JOHN J. WARREN, JR., NEW HAMPSHIRE

Mr. WARREN. I really do not have anything else to add except that it is all a true statement. My first knowledge was from one of my customers, that I was being put out of business, because he informed me of the building permits being issued, and I was elated at the time until I saw only $35,000 to build a new location.

In 1969, the oil company sent me proposed plans for a three-bay operation which they were going to build at my location and remodel, and this new thing came as a bolt out of the blue. I had no idea what was going on.

[The prepared statement of Mr. Warren follows. Testimony resumes on p. 2168.]

PREPARED STATEMENT OF JOHN J. WARREN, JR., MANCHESTER, N.H.

Mr. Chairman, my name is John Warren and I live in Manchester, New Hampshire. For 17 years I operated a company station owned by Cities Service Oil Company at 276 Elm Street, Manchester, NH. Over that period of time the annual volume increased on an average of 7,000 gal. In March of 1973 the Company closed the station, with no notice to me, either oral or written. In the summer of 1973 the building was demolished and in October 1973, they opened a so-called "Quick-Mart", a self-service station, also selling miscellaneous groceries, with one attendant on duty.

The first page of the station lease with Cities clearly states "90 day written notice is required by either party of intention to terminate this agreement . . ."

In my case, I was particulraly vulnerable because for 5 years I had been advised that the Company planned to remodel and enlarge this station to a 3 bay station. This proposed enlargement was not just idle rumor between their salesmen and myself—I have copy of their blueprint dated 6–6–69 showing proposed 3 bay station at that address. (Photocopy of blueprint) Also, miscellaneous correspondence between Boston office and myself regarding remodeling.

The first knowledge of their decision came to my attention by two building permits issued by the city of Manchester, as follows: 2–12–73—Cities Service Oil Co., Tulsa, Okla., Demolish station, 276 Elm St., $3,000; 2–12–73—Same, Rebuild station, $38,000.

I recognized immediately that $38,000 hardly builds a home today, much less a 3 bay station, but I still had received no word from the Company.

On March 13, 1973, I tried to call our area representative and the Boston office. As soon as they heard my name, I was shuffled from one department to another until finally the "low-man" in the office did in fact confirm that I was out of business and they planned to build a "grocery store with gasoline pumps".

On March 15, the area field man met with me, produced a prepared lease, (dated 2–28–73) which I signed that day. We mutually agreed that when a man is only a 9 digit numeral on a huge computer in Tulsa, that no consideration is shown for nearly 20 years of labor.

I signed the release immediately knowing that the Company which holds a $2,500.00 dealer deposit, could and would retain my money as long as they wanted or at least until they had received the required release from me. As it was, the dealer deposit was not returned until 5–29–73 after lengthy phone calls and badgering. Question: Why can a Company hold dealer deposits over the years without some kind of accounting and/or paying interest?

Obviously, I sustained great financial loss as a result of this action. (Attached lists equipment) On equipment alone, I took a 2/3 loss because of necessity of getting out on short notice.

Personally, I had some difficulty in finding employment mainly, because of my age. I sent out over 12 resumes to local businesses, all former customers, and even though I had a good work history, (Firestone Tire & Rubber, 8 years and Citgo for 17 years) the employment picture was definitely down at that time. Ironically, I am now employed at 321 Elm Street which is across the street, from my previous business.

In April of 1974 I was contacted by the Federal Energy Office requesting my assistance in supplying figures on volume and gallonage for the years 1972–1973. I cooperated with them in supplying those facts. As you know, the stations were supposed to be receiving allocation of product based on 80% of previous years business. There were several individually operated stations in the area who could not get deliveries of fuel, while the Company operated station received frequent deliveries and did not have to close because he was out of product.

Subsequently, I was advised that it is the intent of the majors to close down every station nation-wide so that in 10 years, they will only own self-service areas, to reap the most profit for least expenditures. Maybe by then the consuming public will have disposable vehicles that do not require service.

It was with more than passing interest that I also learned of the voluntary resignations of several of this company's executives, with long years of service, who object to the current trend the industry is taking.

In April of 1973 I was asked to appear at a hearing in Concord on proposed legislation to prevent major oil companies from taking advantage of their dealers and/or discriminating business procedures. We were supposed to appear before an "impartial panel" of 7 and when introduced, it was disclosed that 5 panel members had been or were presently members of the Board of several major oil companies. One of the issues discussed was the long-standing practice of the majors selling their products to dozens of so-called cut-rate outfits to compete with their product at company owned stations, at a margin of 7¢ to 9¢ less than their compulsory purchase price to the dealer. We had our day in court, presented some facts, and . . . the proposal was defeated.

Today I came here at the request of Senator John Durkin to tell my story. After my experience, I have landed on my feet and am well-adjusted today. I might add that over the past several months, many of my former customers have asked when I'll go back into business again. Obviously, I must have done something right over the years and showed better consumer relations to my customers than was afforded me from my company. In my opinion, it's question of

priorities, with greed the motivating factor. However, it is encouraging to me that in only 2 years I have been contacted by two different agencies of federal government in an effort to right some wrongs and once again assure the system is working. Thank you for your attention.

Senator DURKIN. Mr. Chairman, I think the issue is pretty well drawn. Are the oil companies or the elected representatives of this country going to set an oil and energy policy in this country?

You know, we here, and I think we all agree, that the Federal Government is involved in too many areas, but I think that most responsible people agree that energy policy is a defense policy; energy policy is a concern that properly belongs with the Federal Government and cannot be delegated to any lower function.

I say that, even though my Governor thinks that New Hampshire National Guard should be given nuclear weapons—he thinks defense is a local issue [laughter]—but, I think the fact is, that energy is a Federal concern, and the people of New Hampshire expressed, on September 16th, their complete and utter frustration with the policy prepared by Exxon and their majors and announced by Ron Nessen and President Ford.

Thank you.

[The prepared statement of Senator Durkin follows. Testimony resumes on p. 2173.]

PREPARED STATEMENT OF SENATOR JOHN A. DURKIN OF NEW HAMPSHIRE

I am honored to appear today, Mr. Chairman, at one of the last hearings before this subcommittee on the issue of vertical divestiture of the multinational oil companies.

There have been more than 40,000 pages of relevant testimony taken on the subject from 305 proponents and opponents of vertical divestiture, including experts on finance, oil company operations, macro-economics, international relations and the stock market. Hearings alone have consumed months; staff time can be measured by years; costs probably range in the hundreds of thousands.

I can offer little more in the way of expert testimony on why the oil companies are too large, why they have abused their political and economic power, or how their breakup would affect the nation's capital or stock markets. I can offer few additional suggestions on the tehniques by which the majors might be vertically divested.

But I appear here today with Mr. Warren because we can offer that crucial missing ingredient in this legislative effort—political and moral support.

The debate on divestiture is no longer a technical debate on the whys and hows. It is a political debate, pitting those who would cling to their precious laissez-faire against those who feel that it is past the time when the federal government should assume its rightful, dominant role in setting the nation's energy, economic and foreign policies. The issue is whether the federal government will have the guts to tell the oil companies what every citizen of New Hampshire knows every time his heating bill is delivered: that the oil companies are too big to be controlled by anyone, and they ought to be cut down to size.

"I am concerned that there has been in our country a riot of individualistic materialism, under which complete freedom for the individual turns out in practice to mean perfect freedom for the strong to wrong the weak. In no other country in the world have such enormous fortunes been gained. In no other country in the world is such power held by the men who gained these fortunes, and by the giant corporations which they control. The power of the mighty industrial overlords of the country has increased with giant strides, while the methods of controlling them, or checking abuses by them on the part of the people, throughout the government, remain archaic and therefore practically impotent."

The more things change, the more they remain the same as they were when Theodore Roosevelt wrote those words in his autobiography. In 1908, Roosevelt appointed a special attorney to break up the Standard Oil Trust through court

action. The Supreme Court finally agreed, noting in 1910 that the "genius for commercial development and organization" in the oil industry seemed inevitably to manifest itself by acts "which necessarily involved the intent to drive out others in the field."

The permanence of the 1910 solution to the oil trust problem is evident today. Standard became Esso became Exxon, the nation's leading oil company giant. Anti-trust litigation has never been a match for the power and agility of the majors.

With me today, Mr. Chairman, is John J. Warren, Jr. of Manchester. For 17 years, he operated as a two-pump service station on Elm Street in Manchester under a lease-proprietorship agreement with the Citgo Oil Corp. His annual volume increased steadily each year during that period, his rent remained relatively stable, his relations with the company were cordial and friendly. When Mr. Warren left the business in 1973, he was doing about $400,000 a year in gasoline sales and automotive service. He took home about $200 a week, and worked an average of 90 hours for it.

In February, 1973, Mr. Warren learned from city building records printed in the newspaper that the station he had operated for 17 years was soon to be torn down, and replaced with a new three-pump station. It was the first he learned of a decision which was to throw his life and finances into disarray. He telephoned the Citgo Boston office, and was told by the low man there that he would, indeed, be put out of business, and that Citgo would operate its own grocery store/self-service station on the same site.

On March 15, the Citgo field representative asked Mr. Warren to sign a release from his one-year contract, backdated to February 28. He signed the release for fear of losing a $2,500 dealer deposit the company held. And he signed the release despite contractual obligations which should at least have protected him for 90 days after notification by the company that the contract would be terminated.

Mr. Warren's financial loss was about $8,000 from this abrupt and heartless change in company policy. With two children and a wife at home, he found that after 17 years of steady work that few employers would now hire him because of his age. When he finally found a job, the starting pay was $127 a week. In winter, his take home pay was cut in half—half for himself and his family, and half for the heat and electric bills. In a few short weeks, Mr. Warren went from a proud, self-reliant businessman to an unemployed father who could have qualified for food stamps.

The story does not end there.

During the next year, gasoline in New Hampshire was informally rationed by station dealers to patrons waiting in lines two and three blocks long. Another Citgo dealer in Manchester complained to the Federal Energy Administration that his supply of fuel was being cut back while the new company-owned store on Mr. Warren's old site was plentifully supplied. Mr. Warren cooperated with the FEA in supplying figures on his sales during the 1972 test period. The evidence seemed clear that Citgo was violating the law, he was told. But to date, no prosecution has resulted. It may be no coincidence that the Boston office of the FEA is headed by a former oil company executive who served his former bosses well in several countries around the world. It also may be no coincidence that Mr. Warren was told by a Citgo representative that the dealer who brought the complaint will be out of business by the end of the decade.

Then, in April of 1973, Mr. Warren was asked to appear at a committee hearing in the State House, where lawmakers were considering state legislation to protect the independent service station proprietors. He found that the panel consisted of five members who had, or were presently, either substantial stockholders in major oil companies, or employees. No legislation was passed that year by the General Court. Five of nine dealers who testified with Mr. Warren are now out of business.

You might be interested, Mr. Chairman, to know that since Mr. Warren was jilted into unemployment by the computer in Tulsa, the number of Citgo stations in Manchester has dropped from six to two. The old Warren station, with three pumps is doing twice the business at three times the profit for Citgo.

You might also note, Mr. Chairman, that when Mr. Warren started pumping gasoline in Manchester, he was charging about 22 cents per gallon. Citgo, on the same site, is now charging 53.9 cents per gallon for regular, which is five cents beneath the price of the other dealers in town, including other Citgo dealers.

Because of the competitive price, Mr. Warren still buys his gasoline at the site he worked so hard for 17 years.

Citgo's story is somewhat different than that of Mr. Warren's.

The 65 year old Cities Service Company is a minor league hitter in the oil company league. The total assets of the company total less than $3 billion, equaling barely 2% of the assets of the 20 largest major oil companies.

In the 1960's, the Justice Department filed a federal anti-trust suit against Citgo as a result of its acquisition of the Jenney Company's gasoline retail outlets in New Hampshire and Massachusetts. After years of litigation, Citgo was divested of its holdings in Jenney properties by consent agreement based on alleged restraint of trade violations.

Fourteen years later at the height of the oil crisis in 1974, the Attorney General of Maryland brought a similar suit against Citgo for violation of the state's anti-trust statutes based on the testimony of a Citgo retail jobber. Citgo dealer Bud Mech had his gasoline supply cut off and his franchise revoked by Cities Service. The stated reason was that Mech bought his tires and batteries from an outlet other than that chosen by Citgo officials. Mech was sacked for his attempts to inject some competition into his business and to sell his goods to the public for less.

At about the same time, a dealer in Tysons Corner, Virginia, had to go to court to prevent the take-over of his operation by Citgo, following a decision by the Federal Energy Office that his pre-paid gasoline contracts were illegal. Only one week earlier, the same dealer was advised by the Energy Czar William Simon that pre-paid gasoline was allowable under the federal rationing system. Based on Simon's advice, J. R. Harrington collected advance payments of $538 minimum from 45 regular customers, claiming the money was necessary for him to pay a $35,888.00 debt to his Citgo suppliers caused by the spectacular quadrupling of oil prices during the fuel shortage. When the federal bureaucracy reversed itself and declared such contracts illegal, Citgo closed his station and relieved Harrington of the lease, incidentally, leaving $18,888 of gasoline still owed to 44 customers.

As recently as six months ago Citgo was cited by the House Investigations Subcommittee for shutting in some of its most productive wells for nearly 4 months during 1974, causing a shortage of nearly 13 billion cubic feet of desperately needed natural gas during the critical November-to-January heating season. The off-shore wells, idled in September for routine maintenance, were closed until the following January on the pretext that repair equipment was not available to Citgo. Congressional testimony by rig workover companies in the Gulf Coast area completely refuted this contention and the Committee reported that Citgo's intentions were apparently to withhold gas from the interstate market until the pressure for decontrol of natural gas prices became too much for the Congress to bear.

Mr. Chairman, here we have in microcosm all the reasons why the enactment of divestiture legislation is so important. The Citgo story has all the elements.

You have a multinational oil conglomerate, using the energy crisis to buy up its independent competition and forcing its own jobbers out of the marketplace. It also used the crisis to control prices for non-fuel goods at Citgo stations through restrictive contracts with station proprietors.

You have a federal bureaucracy designed to give the appearance of fighting for the consumer and the little guy while, in fact, only going through the motions of enforcing federal anti-trust and pricing laws.

On the receiving end, you have the long-suffering public, plunged into the worst recession in the nation's post-war history in large part by the self-interested policies of the oil industry.

Citgo is primarily an oil and gas extraction company. It has reached forward from its production interests, however, to establish refineries capable of making its raw product into marketable commodity. It achieved further integration through the establishment of 6,800 retail outlets through the eastern half of the nation. To link these assets together, Citgo also acquired ownership of 8,800 miles of crude oil pipelines. It also invested in natural gas transmission facilities and natural gas liquification plants, a diversification which only two of the other twenty major oil firms have achieved.

Citgo has built a self-contained system in which it controls its share of the nation's oil resources from gusher to gas tank. In this process it wears a suc-

cession of hats: producer, refiner, shipper and marketer. The traditional competitive distinction between "buyer" and "seller" is lost in this chain of transfers within giant corporations on the way to the marketplace: and the oil octopus winks at itself as it passes its product from subsidiary to subsidiary down the line to the consumer.

In addition, Mr. Chairman, Citgo has reached out to control competition from other energy resources and other nations. When Peabody Coal Company, the nation's largest, went up for sale because of a divestiture suit, Citgo was one of the first bidders. Citgo has also gradually amassed 10,000 acres of oil shale leases in Colorado. When Canada announced the development of its tar sands resources, Citgo immediately signed up for a quarter interest in the 125,000 barrel per day project.

The Company has also expanded its production and exploration operations to sites in the North Sea, Iran, Indonesia, Argentina, New Guinea, Viet Nam, Berma, the Philippines, Bahrain, Angola and Malta. To insure its control over these far-flung resources requires tankerships; Citgo maintains a wholly-owned shipping subsidiary, known as Tankships, Inc.

In addition, Cities Service Company, which forced John Warren out of his 17-year proprietorship, is also involved in mining copper, making garbage bags, processing uranium, manufacturing carbon black printing ink and other inorganic chemicals in Brazil, the Netherlands, Sumatra, Italy and Malaysia.

The advantages enjoyed by oil companies such as these—competition driven out, alternate fuels firmly locked up, and the price of their product easily administered—leads to what the noted jurist Learned Hand described as "the quiet life." No competition, pass through all costs, cut your losses—this creed has led to a no-risk marketplace which has spawned a faceless, unaccountable oligopoly that literally holds the economic fate of the nation in its hand. It also breeds a special kind of arrogance, similar to that expressed by American Telephone and Telegraph Corporation to FCC Commissioner Dean Birch, who advised him that they were "too big to regulate."

Mr. Chairman, in comparison with the truly large petroleum corporations, Cities Service is little more than a wild-cat operation, ranking only 61st on the 1974 Fortune 500 list. It is but a small part of the huge, non-competitive energy market. Vertically integrated and horizontally aggressive, these oil conglomerates have not only gained complete and unfettered control of the process which brings oil from the ground to our cars but recent news stories about mergers and acquisitions show that the oil companies would also finance the car, write the insurance, and manufacture the seat covers to boot.

Three fundamental questions come to mind, Mr. Chairman. Who makes domestic energy policy and American foreign policy? Unfortunately the answer is "no one." Congress tries, through its powers to pass legislation and ratify treaties. But Congress was unaware until years later that the oil companies oversaw the coup d'etat against the government of Iran in 1953. And they were unaware in 1969 that the oil companies orchestrated the rejection of a refinery proposed for Machiasport, Maine, which would have meant cheap oil for a northeast region now paying the highest heating bills in the country.

I cannot forget, Mr. Chairman, that it was the quiet but effective cooperation of the major oil companies which insured the success of the Arab oil embargo two years ago. I cannot forget that Exxon, the nation's largest oil company, refused to honor its commitment to supply fuel to our Sixth Fleet. I cannot forget that at the same time Gulf was saying it needed bigger profits to spur oil development, its officers were arranging for the purchase of a circus, and funneling thousands of dollars into the pockets of elected representatives.

This leads to the obvious second question—Who runs the oil companies? The equally apparent answer is once again, "no one." The very size of the oil octopus militates against the ability of any one man or one board of directors or regulatory agency to be aware of slush fund payments to politicans and pipeline pressure in Bahrain and tanker routes around the Cape of Good Hope. The oil companies themselves cannot even decide whose side they are on: OPEC's, America's, each others. Perhaps it is every conglomerate for itself. There is no competitive structure to the industry. Cooperation among rivals has led to the blurring of traditional marketplace relationships of classical capitalism. As a result, the oil industry has lapsed into sluggish, profligate behavior.

This raises the third and final question facing the Subcommittee and the nation in our bicentennial year. "Who needs this situation anyway?" Once again,

I submit the answer is a resounding "no one." Certainly the energy consumer doesn't need to fork over $14 for a barrel of crude oil used in this country for a quarter of the price just because that it is what the OPEC sheiks are asking for theirs. Certainly the stockholders of the oil conglomerates could use an increase in the value of their shares which could be brought about by a reorganized aggressive industrial structure. And certainly the industry could use a break from the oppressive and inept price controls of a federal bureaucracy and a respite from the constant threat of nationalization.

In 1871, reformer and railroad president Charles Francis Adams reported glumly that the large corporations of America "have declared war, negotiated peace, reduced courts, legislatures and sovereign states to unequalled obedience to their will." A century later, little has changed. Our economy continues to be dominated by combines. Twelve of our 25 largest corporations are oil firms.

Oil companies in 1974 spent $300 million to put a fine gloss on the fleecing they were giving the American consumer and to bemoan the fact that their profits were insufficient to generate enough capital to extract and deliver their precious commodity to an energy-starved nation. As if this was not contradiction enough, the financially hard-pressed oil industry was somehow able to muster enough money to play Medici with grants of some $60 million to the performing arts and to play Machievelli with contributions in the untold millions of dollars to politicians, all over the world.

Mr. Chairman, the time has come for this subcommittee to raise high the roof beams—to bring out a vertical divestiture bill to the full Judiciary Committee this month, and force a bill to the floor before spring. The bill should authorize a special court to hear law suits which result from the legislation, with speedy appeal to the Supreme Court. And the bill should allocate funds for a special legal team to represent the interests of the government in court.

We must act before this petroleum octopus violates and subverts any more of what is good, decent and fair in our political system, and before the price of fuel and gasoline eats away any more of the family budget. Millions of small, self-reliant, hard-working businessmen stand in jeopardy by our inaction.

We should act before the Senator from Michigan, Mr. Hart, retires from the Senate after more than a decade as the lone voice against the oil companies in the U.S. Senate. Perhaps no member of our chamber has been right so early, so often about so many crucial issues of American public policy. No greater tribute to his perseverance, foresight and creative thinking could be paid than passing this bill and overriding the inevitable veto by the end of the session.

And finally, Mr. Chairman, we should act for John Warren of Manchester, New Hampshire.

Mr. Warren is here as a reluctant witness. This weekend, he and his wife wife decided that it would be best for him not to make the trip, because, as he told my staff, there was nothing he or I, or even the United States Senate could do to stop the big oil companies from doing what they damned well pleased.

"Why should the United States Senate vote to break up the oil companies when probably two-thirds of the senators receive campaign contributions from the same companies," he asked me when I called to change his mind.

Mr. Warren is no economic radical bent on destroying the free enterprise system. But he speaks for millions of hardworking, moderate Americans in his belief that the oil companies have become so big that they no longer respond to traditional American values. And, more important perhaps, he has developed a nagging, persistent doubt about the ability of government at any level to confront even the most pressing and obvious national problems.

In this debate, we are not asking the technical questions of defining or solving problems. We are asking the more fundamental question—can we depart of eight years of more-of-the-same Republican policies and devise an innovative and decisive defense against the oiloglopoly.

Hopefully we can.

There is hope because Mr. Warren decided to join me here today in support of vertical divestiture.

There is hope because of Senators like Mr. Hart, who has never doubted the ability of the federal government to rise above the petty and self-interested when finally pressed to the wall.

And there is hope because the voters of New Hampshire sent me to Washington with marching orders to clean house at the federal palace which appeared to them to be owned and occupied by the oil industry.

What we need, Mr. Chairman, is legislation, swift and firm, to right our social and economic injustices. No one piece of legislation would accomplish more to that end, and restore confidence and faith in our government, than passage of legislation to break up the large oil companies.

Senator TUNNEY. Thank you very much, Senator. I appreciate your coming to the subcommittee and giving us an opportunity to hear, firsthand, from someone who has been the victim of a policy to restructure the retailing of gasoline and oil products in this country. It is not only in New Hampshire that this restructuring is taking place, and independent businessmen who own service stations or lease service stations are being put out, and company service stations are being put in, in place of the independent businessman.

In California, we have a similar situation, and I have met with many small businessmen who find that they no longer have a job after having worked for one of the major companies for many years. I also am familiar with the fact that some of these lessees are finding that they are purchasing their gasoline wholesale for a lot more than independents are purchasing the gasoline for, more than the prices being charged to those service stations which are owned directly by the company. So I am familiar with the problem, and it is one which, I think, is not going to be resolved until we have a divestiture bill passed which becomes law of the land.

I want to thank you for your testimony, Senator Durkin, for the very active roles that you have taken, and for the clarity with which you have spoken out on this issue since you have been in the Senate.

Senator DURKIN. Thank you, Mr. Chairman. Mr. Warren and I appreciate the opportunity. I want to thank Mr. Sampson for providing the time.

Senator TUNNEY. Thank you.

Our next witness is Anthony Sampson. I might just say, before you start your testimony, Mr. Sampson, that I thought your book was incisive, scholarly, and readable, and I personally feel that if every Senator and Congressman read it that we would have a divestiture bill passed in Congress this year. And, I think, of the many thousands of words, or many thousands of pages, I have read in printed form on the oil industry that none have been more artfully crafted than yours in your book, The Seven Sisters. And I think that it is, perhaps, fair to say that it understates the case to state that I am a fan of yours and your book.

I am very happy to have you here. Please proceed.

STATEMENT OF ANTHONY T. S. SAMPSON, LONDON OBSERVER, LONDON, ENGLAND

Mr. SAMPSON. I would like to read a short statement.

My name is Anthony Sampson. I am a writer and journalist, and author of several books about politics, current affairs, and multinational corporations, the last of which, The Seven Sisters, was concerned with the international oil corporations and their relationships with governments.

I am honored as an Englishman to be invited to testify before your subcommittee. I would like to emphasize that I appear before you simply as an individual, representing no organization, no government

and no newspaper. I do not claim to be an economist or an oil specialist, but as a writer and student of politics, I have enjoyed some freedom of access to some of the principal policymakers on all sides of oil diplomacy, and I have been to some pains to try to assemble evidence from different viewpoints. And I hope my observations may be of some help to your subcommittee.

What concerns me particularly are the relationships of the major oil companies with the Middle East, especially with Saudi Arabia, Iran, and Kuwait. It is with this area that the Western World is likely to be more and more concerned, and to quote Exxon's latest projections published last month: "By the late eighties OPEC could well be looked on to provide some 45 to 50 million barrels a day of production," and the burden of balancing world oil requirements will fall increasingly on Saudi Arabia. It is in the Middle East, I believe, that we are faced with a quite new kind of problem in dealing with the major oil companies, and particularly with the so-called Seven Sisters. The new problem is not only that the price of oil has quadrupled, it is also that the balance of the world has changed. A group of 13 countries have suddenly emerged with the power to fix the price of the fuel on which the whole Western World is dependent.

Two years ago, many economists, experts, and administrators predicted that once the oil consumption began falling, the OPEC cartel would begin to fall apart. Dr. Milton Freidman, I recollect, confidently announced the impending collapse of OPEC. Dr. Kissinger himself proclaimed that the high oil price was intolerable. William Simon predicted its imminent fall, and Thomas Enders publicly announced the intention of the State Department to break up OPEC. But, in fact, as we all know, OPEC put up the price still further, and gradually the line of the State Department and the Treasury, at least as far as I could perceive it from London, began to change. In the first place, many experts came around to the view that perhaps the price of oil was not, after all, much too high.

And secondly, the State Department began to become less obviously antagonistic to OPEC. So that only a few weeks ago, December the 4th, Mr. Parsky told us that OPEC would continue to determine the world oil prices for at least 2 to 3 years, and that its power would only be eroded through the development of alternative sources of energy, and that to try to break it up through other means would only be counterproductive.

But it is important to distinguish very clearly, I think, between these two separate changes of policy. It is one thing to decide that perhaps the right price for oil is the one that OPEC happens, for the time being, to have fixed. It is quite another thing to accept that the price of oil will continue to be fixed by a group of 13 countries.

The fact that the petrodollar surplus in the OPEC countries has proved much smaller than expected, and that the West has been able to export a good deal in return for the oil, does not at all alter the fact of this great shift of economic power. Indeed, it must not be forgotten that we have paid for some of this oil with a very dangerous currency with huge sales of arms.

The sudden shift of power, I suggest, is without precedent in the recent history of the West. Perhaps it might be compared to the

influence of the Middle East on the Roman Empire in the second century A.D. But the question to which I want to address myself to you in this is this: What role are the International oil companies playing in this new development, in this new shift of power, and how far is it really in the Western interest?

I have seen no convincing evidence that the big oil companies deliberately engineered the price increase in 1973 to increase their own profits and resources, nor do I believe there was any kind of secret conspiracy between the companies and OPEC at that time. But I do believe that it would have been very much more difficult, perhaps impossible, for the OPEC countries to organize their cartel and maintain it so effectively if a few companies had not been dominant in the main producing countries, serving as the machinery for maintaining the OPEC cartel. And those companies now find themselves in a position of being closer in their interests to the producing countries than to the Western consumers.

This partnership, I maintain, is not sudden. It was planned and foreseen by the Arab oil producers in the aftermath of the Six-Day War in 1968. It was then that Sheikh Yamani of Saudi Arabia described how he aimed to create a "indissoluble marriage," to unite the oil companies and the producing countries. This was the intention behind the whole policy of "participation," as opposed to nationalization, a policy which would make the companies the partners of the producing governments in running the oilfields. And even though these governments, since 1973, have been asking for a 100 percent participation, they have taken care to insure that the major oil companies will still be bound to them by long-term contracts, attracted by preferential prices and by guaranteed access to oil.

The producing countries, from everything that they have done and said, have shown that they are still very anxious to keep the major oil companies close to them, not only for their technical expertise, but in order to insure the smooth working and marketing of their oil: in fact, to act as agents for their cartel.

It is important to remember that the OPEC members have never, themselves, been able to agree among themselves as to how to ration their production of oil. In the sixties, for instance, they tried several times to produce systems of prorationing or programing, and each time they failed. They needed the companies, and particularly the big companies, to make sure that there would not be a sudden glut of Saudi oil or Libyan oil or Abu Dhabi oil, which might flood the market and bring the price down. Traveling through the Middle East last year, I was very impressed by the extent to which the leaders in the oil-producing countries felt a sense of dependence on the international companies, on the great giant companies.

The Shah, for instance, described to me how OPEC first established its effective cartel: With the Seven Sisters controlling everything, once they accepted, everything went smooth". I asked him specifically: Will you be prepared to cut production in order to maintain the price, even if that diminishes your total revenue? He replied: Yes, we will do that, but the companies are doing it for us. And the Shah's Oil Minister, Dr. Amouzegar, enlarged on this theme: The Shah was right. Why abolish the majors if they can find markets

for us and regulate them? Iran can just sit back and let the majors do it for them.

The OPEC countries could only operate their cartel on their own if they could agree on their own prorationing system. To quote Prof. Neil H. Jacoby, in his book on "Multinational Oil," page 271: "To succeed, the OPEC must become another Texas Railroad Commission, prorating allowable outputs among its members to levels the market will absorb at the price it has established." But OPEC has never succeeded in becoming a Texas Railroad Commission, and Sheikh Yamani, himself, explained to me why: They could not agree on the basis of the rationing; whether it should be in terms of capacity or of population or of need. So how does OPEC survive without being able to prorate? Because, I submit, the oil companies do it for them.

I do not want to simplify the problem of how the OPEC cartel has held together. Of course, OPEC has a very great advantage over other potential cartels, namely, that its strongest member, Saudi Arabia, is in the position to cut back or expand production as it wishes. It is not in grave need of the money, and it has huge potential production. As Sheikh Yamani described it to me: Usually, any cartel will break up because the stronger members will not hold up the market to protect the weaker members. But with OPEC, the stronger members do not have an interest to lower the price and sell more.

OPEC as a whole derives great strength from the fact that its key members, Saudi Arabia, Iran, Kuwait, are dealing predominantly with a few giant companies who can guarantee their markets and help maintain their prices. This affinity between the companies and countries has been commented on by many oil economists. Only recently, Dr. Paul Frankel of petroleum economics in London, a respected student of the oil companies, has restated the problem: The fact that OPEC is not confronted with a multitude of miscellaneous buyers but by a limited number of offtakers, makes easier, and perhaps is what makes possible, the maintenance and control of prices and terms.

It is this relationship, I maintain, which introduces a new dimension to the old problem of controlling the international oil companies. For the earlier cartel of the companies what was evident in the fifties now has taken new shape in a cartel of foreign producing nations, with the companies operating in the background to help them maintain it. And the companies, themselves, find heavy obligations and commitments to foreign countries, which raise recurring questions about their true loyalties. Moreover, these overseas commitments are likely to become greater, rather than less. For while the big companies may eventually become less important in running the Middle East oilfields, in other fields they will become more important. The governments in the Persian Gulf area are desperately concerned to develop themselves industrially, to build their own powerplants, petrochemicals, agriculture, infrastructure. And for this huge development, most of them look to the great companies with whom they have worked for the past 40 years.

Nowhere is this more marked than in Saudi Arabia, the key to the whole jigsaw, where the four oil companies that make up Aramco

have already played a crucial role, not only in discovering and exporting the oil, but in developing the whole country. The role of Aramco in the next years, as universal contractors to the Saudis, is likely to become much greater. They know the country, they are trusted, and they have their expertise. When I was in Saudi Arabia a year ago, the Minister of Planning, Hisham Nazer, stressed that much of his huge development plan would depend on Aramco. And the president of Aramco, Frank Jungers, explained to me that his problem was not how to distance himself from the Saudis, but how to get still closer.

But, of course, there will be conditions. The Saudis will look to the four parent companies as their allies, perhaps their chief allies, not only in the Middle East, but in the American domestic political scene. And the Saudis will not want the companies to do anything that might disrupt the smooth working of the OPEC cartel. I do not think I need remind you who the four companies are that own Aramco. They are the familiar names of Exxon, Standard Oil of California, Texaco, and Mobil. The question will thus continually be asked of the oil companies: Where exactly do their true loyalties lie? And it will become more difficult to answer.

Moreover, it is not just from the Western side that the companies will find themselves under fire. Within the producing countries, too, their position is delicate. In Saudi Arabia, the basic alliance, I submit, is not so much between two nations; it is between one company and one family. The Saudi Government's dependence on a single consortium may eventually make them more vulnerable to attack from radicals within or from jealous neighbors.

There is an important warning in past history. Twenty-five years ago in Iran, there was a comparable relationship between a single government and a single company; in this case, the British Anglo-Iranian Co., now called BP. By 1950 the company had become the target and the scapegoat for all the radicals and nationalists in Iran, while the BP monopoly of Iranian oil was bitterly resented by other consuming countries. The nationalist leader, Dr. Mossadeq, in 1951, nationalized the oilfields and expelled BP, and ultimately the Shah himself. They were eventually both reinstated, but with great difficulty, and at a cost for which we have paid heavily.

Likewise, I believe, the close relations between Aramco and the Saudi Government present a position of great political danger for the four Aramco partners, in the long run. Much of their future growth, as well as their chief product, comes from a single foreign country whose own foreign policy is bound to be continually controversial. Even without the Arab-Israel conflict, this dependence would be tricky enough. But with it, it is explosive. The more the Arab-Israel conflict is fought inside the United States, the more the Aramco partners will find themselves in the frontline of the political battlefield. It can be argued that the companies' predicament is only part of the whole predicament of American foreign policy, and that the companies are simply their scapegoats for the national quandry, and the quandry of the West in general. I do not wish to belittle this argument; with or without the companies, the United States finds itself more and more dependent for its vital oil supplies on the Middle East, as we do in Europe.

The State Department or the Treasury may well instinctively be reluctant to do anything to break up the great companies which are helping to forge this vital relationship. The whole security of the West, they may well claim, will be threatened for the sake of some idealistic trustbusters. This argument has a very familiar ring. It sounds very like the argument that raged through Washington 20 years ago, at the time of another great crisis in the American policy towards oil and the Middle East. It was then, you recall, that the antitrust movement had once again come to a peak, with the publication of the famous 1952 report of the Federal Trade Commission on the International Petroleum Cartel. It was then that Dean Acheson, as Secretary of State, insisted that, nevertheless, the oil companies must be encouraged to form a new consortium in Iran, to ensure the stability of Middle East supplies and to provide a bulwark against communism.

The arguments that followed then between the State Department and the Justice Department went down to the fundamental issues. Dean Acheson, in an outspoken and famous memorandum, maintained that the oil companies were, for all practical purposes, instruments of our foreign policy towards these countries. Attorney General McGranery replied that the world petroleum cartel is an authoritarian, dominating power over a great and vital world industry, in private hands.

Today again, we may appear to have a conflict between antitrust policy and defense and foreign policy. But the issues have become very different and more critical, I believe, in the face of the special relationships between the companies and OPEC. For antitrust policy has now become intimately linked not only with foreign policy, but world economic policy. And the critical question today, I believe, is this: Is the price of supporting those great companies, with their heavy foreign commitments, worth paying in view of the political problems they must create? Are they entitled to diplomatic and fiscal support, at a time when their real loyalties are in doubt? Or would the interest of the West be better served by a multiplicity of companies, who can represent a less exclusive interest, and provide a more diversified, and thus less vulnerable, commitment?

Of course, the companies have been unfairly blamed for many of the faults of both governments and consumers. But for many of their troubles, I believe, the companies have only themselves to blame. They have insisted on keeping control of their global organizations in the hands of very unrepresentative boards, who have been far too slow to face up to a changing world. It would have been possible, I believe, to have made these great corporations into much more genuinely international entities, much more accountable and open in their dealings with the public. Instead, they have tended, with each new crisis, to close their ranks.

The current scandal about bribes, I suggest, is part of the price that is being paid for their secrecy. Bribes, of course, are a problem for all companies, national or multinational, of whatever nation, dealing with certain parts of the world. But the payment of huge bribes, within the closed world of a giant company, raises the whole question of the accountability of multinational corporations.

If a company can conceal $50 million dollars paid to Italian parties from its shareholders and its auditors, what else can it conceal? And how can it establish its credibility with the public or the politicians? For this reason and others, I have felt that it is quite a good case for legislation to insist that companies beyond a certain size, whether in America or in Europe, should have a public director on the board, directly accountable to the government, or better, to Congress or to a parliament. Such a scheme has often been put forward, and strongly opposed by the companies. But I am not sure that they are sensible to oppose it. If there had been a public director on the boards of each of the international companies over the past few years, reporting to Congress, enforcing greater disclosure, they might well have avoided some of the more disastrous scandals about bribes; and they might now be more credible. And I simply do not believe that the giant companies can hope to regain the trust of Congress, or shareholders, or client nations abroad, with such a narrow representation on their boards.

I suggest that if they remain unreformed, the giant oil companies are likely to become an increasing embarrassment not only to Congress, but to Government, too. For as long as they retain their unpopularity and noncredibility, they must be an obstacle to calm consideration of sensible energy policies. The problem of developing alternative energy sources, like the problem of relations with the Middle East producers, will be muddled, and not simplified, by the presence of these all-too-visible giants.

I am not convinced that nationalization provides the answers to a more efficient oil industry. I have enough experience of the limitations of nationalization in my own country, and it has to be said that governments have made a fairly poor showing in their handling of oil problems.

I am not convinced that by breaking up the integrated companies within the United States into their four components, that you would do much to bring down the price of oil. But I believe that the most crucial area for increasing competition is between the producers and the buyers of crude; and it is here that the integrated oil companies present a real threat to the consumer. This threat, I maintain, is most serious in the case of production abroad, and particularly in the Middle East. The case for governmental control is here doubly strong: for the relationships of the integrated companies with the OPEC cartel raise questions not only of antitrust policy, but of foreign policy commitments.

In the interests of both diplomacy and of free enterprise, I believe the companies should be kept at arm's length from the producing countries. I see a strong case for legislating to prevent the companies making long-term contracts with the producers, and for establishing a freer market at the production end. There is an even stronger argument for preventing the same companies that are concerned with the worldwide distribution of oil, from being the industrial partners of the producers in other activities.

There is no reason I see why American companies should not be permitted to become the general contractors for the Saudi Government, but there are strong reasons why this operation, which carries such a large political commitment, should not be undertaken by four

oil companies which have such an important influence on world oil policy, and such a high stake in the domestic oil market in America. And the same is true of British and other European companies operating in other countries.

I do not believe that such legislation should be regarded as a threat to the oil industry as a whole, or an interference with free enterprise. In fact, it is the opposite. Much of the dynamism of the industry has come from smaller companies exploring at home and abroad. And I believe the restriction of the links between the majors and the producing countries would bring greater opportunities to the independents. A limitation of the giants might well help to revive the whole industry, as happened, you will recall, after Standard Oil was broken up in 1911.

The huge expansion of the international oil companies was not a simple question of heroic free enterprise. Any reading of oil history will show that it is misleading to suggest, as so many oilmen do, that "like Topsy, they just growed." They were encouraged, prodded, and often protected by their governments, as the favored purveyors of cheap oil. As Dean Acheson said, they were regarded as the instruments of American foreign policy.

Prof. Neil Jacoby, in his book, "Multinational Oil," has rightly stated this: "In the end, governments determine the number of firms in the industry and how vigorously they compete. Nations have gotten as much or as little competition as they deserve." And may I repeat that: "Nations have gotten as much or as little competition as they deserve."

I submit that the U.S. Government, and other Western governments, today deserve to have much greater competition in dealing with the producing countries, than exists at present. The structure of the great consortia in the Persian Gulf, with a few integrated companies working in harmony, may earlier have served Western interests, in the short term, when they were able to bargain effectively with the producers. But now, the whole mechanism of the integrated companies has been turned around, to serve the interests of a foreign cartel.

What we do about the oil companies must eventually depend on what we want to do about the price of oil and about OPEC. Do we want to get the oil price down or to keep it up? If the second, do we really want to break up altogether the OPEC cartel, which is the instrument for keeping it up? Or do we want to keep some kind of controlling system, modified and expanded, to give representation to the whole world? I think we want this last objective. I think in the long run, it will not be tolerable for the rest of the world to have its oil supplies controlled by 13 countries—or 15 or 16, even if they include Great Britain.

It will be not just because the cartel will keep prices high, but perhaps more important, they—or at least some of them—could push prices down. And this, you remember, was always the deadliest weapon in the armory of the first oil monopolist, John D. Rockefeller. Whenever faced with a potential rival, he could afford to bring his prices down to rock bottom, until he had undercut and destroyed the opposition. And this is still the nightmare of investors in shale oil and tar sands.

Moreover, it is possible, I believe, that some of the members of OPEC may themselves become increasingly aware of the strains of their own isolation. Many of them, after all, are in very exposed parts of the world, up against unfriendly neighbors, and some of them are already beginning to show some signs of what I would regard as millionaires' neurosis, worrying about not being loved, and being alone in the world. The members of OPEC may themselves become more aware of the perils of being rich nations surrounded by poor ones, and they may seek more anxiously to find allies and props in the West. There is every reason why the West should benefit from this insecurity to establish a broader base for controlling the world's oil supplies, in which the consuming countries and the third world would have a say.

But this brings us back to the problem of the international oil companies. For one of the chief effects of their agreements in the Middle East, their apparently indissoluble marriages, is to reassure their partners. But these close relationships are not, in the end, I maintain, in the interests of either Western security or the Western consumers. It is not simply that they are underpinning the self-contained OPEC cartel, and giving hostages to the producing countries. They are providing also bridges that are altogether too brittle, and too vulnerable. The more companies that can be involved as the buyers and distributors of oil from the key producing countries, the less vulnerable we, and they, will be to political upheavals and resentments.

So I submit that we are not now faced with the old problem of a conflict of interest between antitrust policy and Western security. I think both interests now converge, and should come together to devise a system to limit the connections and long-term contracts between the international giants and the producing countries. If this were to be done, the oil might not necessarily be cheaper, but our oil policy in America and in Europe would be more competitive, more flexible, and in the long term, more secure. And the democratic interests of antitrust policy, for which I personally have much respect, would be very much better served.

Senator Tunney. Thank you very much, sir.

I note, in your statement, that you recommend two approaches to dealing with the major international oil companies. First, you suggest that separating crude product from refining is called for and, second, you suggest that we would be better off if the producing joint ventures within the OPEC countries were dissolved. Could you elaborate on each of these proposals?

Mr. Sampson. Senator, I believe there are the two points, but I think they are intimately connected. I think that it is the crucial frontier between crude production and refining, which is much the most important in terms of increasing competition. And, as I think we have already heard testimony earlier, it is, of course, in crude production that the concentration is most worrying and disturbing, whether inside the United States or in the joint ventures abroad.

I believe the two parts of the problem must go together, and I think, particularly, that so long as the giant international giant companies have huge crude reserves within the United States that they will clearly have an interest in keeping up the oil price abroad be-

cause, of course, they are bound to become more concerned with the profits they achieve from domestic crude by maintaining the high OPEC price. So, I think the two are very closely connected, and I would suggest that any legislation should take account of both aspects.

But it seems to me, that in terms of any attempt to make the price more flexible, that it is the question of OPEC, and it is that relationship between the big companies and the joint ventures in the producing countries which is the most critical because it is, of course, at the moment, OPEC that maintains the world price.

Senator TUNNEY. One of the things that you mentioned in your statement, as well as in your book, was the problem of secrecy that has always been a part of the dealings of the companies amongst themselves and with foreign countries. And you had before mentioned in The Seven Sisters the fact that, for a period of years, the consortium in Iran kept from the Shah and the Government of Iran the intricacies of the contract which, in effect, kept production in Iran down by making individual companies pay a price penalty for taking off more oil from Iran than the contract called for.

And I recall, in your book, you mentioned that the Shah was furious when he eventually found out what the details of the contract were. And we have seen more recently some of the effects of secrecy insofar as illegal campaign contributions and the siphoning off of large sums of money to be paid, in cash, to political parties or politicians. And the shareholders of the companies involved were unaware that this was happening.

Do you feel that the relationship that exists between the consortia, and their host countries, is of a nature that secrecy is an important element in making that relationship work in marketing the oil that is being produced from the host countries, considering the structure of the industry, the fact that you have an integration between the producing and the distribution-marketing sides of the industry?

Mr. SAMPSON. Senator, I believe it is correct that the oil industry, and particularly the giant companies, have been obsessed by the secrecy question from their origins. And, to some extent, this has become a reflex which is not necessarily, I think, associated with our own immediate self-interest. I think they have taken secrecy to the point when it is very often, very likely to rebound on them, as it did in the case you mentioned of the Shah discovering the terms of the consortia production agreements in the late sixties. I think there are certainly times when the giant companies feel required to be secretive, particularly on questions of transfer pricing and on the detail accounting inside their companies because, of course, secrecy is a very important element in their means of tax avoidance and their distribution of their different profit elements within the large structure of that integrated company.

But I think, in general, that the secrecy they have tended to practice, and still do practice, with respect both to producing governments and to their own domestic governments, is always likely to be counterproductive in the end, partly because secrets have a habit of getting out and partly because it tends, in the end, to create artificial structures. I think we have now, perhaps, a rather interesting example of this in the present situation between the Iranian Government and the Iranian consortium, which includes all seven of the Seven Sisters,

which is, at the moment, reaching a very acute stage, in which the Shah is determined to increase the production in his own country and believes, I think, that the Iranian consortium, including the five big American companies, are deliberately taking less for, I think, he suspects political reasons.

Now, whether there are political reasons behind that or not, I think the fact is that their secrecy and the element of tightness in their consortium is inclined to encourage this kind of confrontation and this kind of tension. I think, for that reason, that the argument for having a public director on the boards of the big companies is, itself, very strong because I think that, for instance, the fiasco of Gulf's attempts at secrecy and concealment of bribes was a disaster not simply for the general democratic system but for the Gulf Corp. itself.

I think the secrecy must be broken down somehow by some means of that kind, but I do also believe that by having more companies operating, whether in Iran or Saudi Arabia, that element of secrecy will become much harder to maintain.

Mr. Chumbris. Mr. Chairman, may I, on this point, just break in?

Senator Tunney. I just want to follow up, but then I will yield, Mr. Chumbris.

Do you believe that by requiring a divestiture of the production side of the business from the other elements downstream of the business that you would have the salutory effect of eliminating some of the secrecy that has surrounded the relationships of the companies with themselves and their host producing countries?

Mr. Sampson. I think we are bound to know a great deal more about the actual cost of producing the oil and the actual terms under which it is bought. I think the great problem at the moment that the oil companies, as well as ourselves, are finding is, that we simply do not know, we are not at all sure that they are acting in the consumers' interest because they are, of course, making very large profits from producing crude, as well as lesser profits from marketing it at different stages on the way.

I think once you have got that division, all of us will be much clearer as to exactly where the consuming interest lies and where the true costs lie. So, I think that that element of secrecy is bound to be less, once you have some form of divestiture.

Senator Tunney. And, as I understand your statement, the secret aspects of the negotiations of the companies between themselves and their host countries is producing, in the case of Iran, a sense that the companies are taking less oil from Iran for political purposes, perhaps being encouraged by our State Department not to take as much oil from Iran as they might in order to bring Iran's foreign policy into line with what we would hope that it would be?

Mr. Sampson. That is my understanding of the Iranian attitude at the moment. I think the particular situation today in Iran is of great interest, partly for that reason, partly because, I think, it does bring out that old fear of political interference. But I think it is also of particular interest because it makes it quite clear to me that one cannot possibly say that the OPEC countries are regulating their own production because if the Shah is now bitterly complaining that the companies are not taking enough oil from them and, in fact, is making such a serious issue of it that he is threatening to cancel orders for

the United States and elsewhere, then it is hard to believe that he is, himself, deciding their production secretly.

Perhaps, if I could just briefly refer you to the testimony of Mr. Tavoulareas, of Mobil, to your subcommittee, he said, I think, then: OPEC unilaterally changes prices, production rates, et cetera. Now, I think the evidence of Iran, in this case, makes it clear that OPEC is not unilaterally changing OPEC rates unless the Shah is being extremely devious in his dealings, which I do not, in this case, believe he is. Because clearly the Shah is complaining that it is the companies that are changing the production rates and that it is very much against his will and, therefore, presumably, against the will of OPEC.

Senator TUNNEY. We had testimony before this committee by a Professor Blair who indicated that, from 1950 to 1972, oil production worldwide increased 9.55 percent a year, with only a one-tenth of 1 percent deviation in any year from that 9.55 percent. Now, it led me to believe—and I think that Professor Blair was trying to make this point—that the major international oil companies, in effect, control the supply of crude that is going to market and that they have the capacity to allocate the crude to whatever markets they choose and to take the oil from any particular source that they so choose. Is that your impression from the work that you have done in studying this problem?

Mr. SAMPSON. I believe that is correct. It was, I think, the preoccupation of the giant companies throughout that period to make certain that there should be no glut that would disturb the market. The Iranian consortium agreement and the Saudi Arabian agreement were very carefully constructed in order to avoid too much oil coming out of either country to maintain the balance between those principal producing countries. And this was a source of great rivalry and bitterness to both those countries. And this is the basic mechanism that the OPEC countries are now determined to maintain, the OPEC countries having, in effect, turned around that machinery of control to their side. And they are now equally preoccupied to make certain that there should be no excess oil on the market which would, then, bring down the price and which would change the structure of OPEC.

Senator TUNNEY. Senator Abourezk?

Senator ABOUREZK. Thank you.

First of all, I think the point you make that the majors are determining the amount, at least the amount of OPEC oil that enters this country, I think that is a good point.

In this committee, during testimony by the director of the American Petroleum Institute—I do not know if Senator Tunney was here, but I happened to be here that day—he made the statement that Saudi Arabia was cutting back on its production of oil, on its delivery of oil to the United States, and, thereby, we could not get all the oil we wanted in this country. It was not too many weeks before that that I had talked personally with the Oil Minister of Saudi Arabia, Sheikh Yamani, who had told me that they were producing, I think the figure was 6½ million barrels a day for the United States and had offered to produce another 2 million barrels a day, but the companies did not want it. I think that is an accurate point that you brought up.

Now, that brings me to a question on the effects of divestiture, say, that we split off the production end from refining and the other

aspects of oil operation. I think I understand what the effect of that would be domestically, but I am not sure what effect it would have on the OPEC cartel. It seems to me that, since the cartel which would ship oil f.o.b London or f.o.b. anywhere would not come under the jurisdiction of the antitrust laws that we pass in this country, it would be able to remain together, remain tight and continue both its rate of production that it wanted and the price that it wanted to sell the oil for. And even if you did have the beneficial aspects of divestiture in this country, it would not extend beyond our shores.

I wonder if you might discuss that.

Mr. SAMPSON. Senator, I think it is clear that when the producing countries nationalize their oilfields, there is nothing that the Antitrust Division can do to prevent those nationalized oilfields from forming their own agreements between sovereign states. But, as soon as that oil leaves the oilfields and becomes subject to any American company or any European country, the situation changes. As soon as a contract is made whereby that oil will be lifted from the oilfield and will then go into tanker or will go into the whole pipeline system of an American company, then it becomes subject to, I assume, American laws and to American antitrust.

Senator ABOUREZK. But once the price has been set, there is not much you can do about it.

Mr. SAMPSON. Well, the crucial question is: How does the greater competition that would be effected, how would that, in turn, effect the price? Because there is not much point in the OPEC cartel fixing a very high price if, in fact, in the end, people are not going to buy at that price or, more importantly, if one or two countries are going to decide that they wish to sell oil more cheaply in order to increase their production.

Senator ABOUREZK. You are hoping that the tightness of the cartel would break down, once the monopoly of the oil companies, themselves, disappear? That is essentially what you are saying.

Mr. SAMPSON. That is right.

Mr. CHUMBRIS. I was just going to bring an example, Senator Abourezk. Just one second.

Assuming Senator Abourezk's question prevailed and the companies were all nationalized or that the OPEC nations said, "Since this law is going to break up the divestiture in this country, we will deal only with BP and Shell, which are not American-based countries," then our companies will be completely out of it, then, wouldn't they?

Mr. SAMPSON. Well, I am glad you asked that question because it, of course, is very relevant to the future. I believe that the considerations that I have mentioned, in terms of the advantages of greater competition and flexibility, will become equally applicable to European governments and also to European companies. And, of course, both BP and Shell and other European companies have considerable cross interests with the United States, and, of course, BP has very huge interests in Alaska at the moment.

I do not believe it is at all impossible to reach some common agreement between the European and American governments on this question because I think that the European interests will, in fact, be the same.

Senator ABOUREZK. Well, I do not think that there is any difference between a British or a Dutch company and an American company if they are operating within our borders.

Mr. CHUMBRIS. But, Senator, they may decide, since this evidence shows that these international companies, most of their business, 75 to 85 percent is around the world, and, therefore, if they were precluded because of restrictions, they will say, "Well, we will just forget about the United States, and we will deal with everybody but the United States."

Senator ABOUREZK. That is pretty unrealistic.

Mr. SAMPSON. The importance of the United States' market and production for both Royal Dutch Shell and for BP is very great indeed, and will become greater in the future. And I do not, myself, believe that the long-term attitudes are going to be very different in the two continents.

Mr. CHUMBRIS. The question is we do not know——

Senator ABOUREZK. I have really got to run, so if you could argue later, I would appreciate it.

Are you kind of suggesting in your testimony that we not only attempt a vertical divestiture, but also, in either this or different legislation, try to prohibit the forming of joint ventures in horizontal agreements that the oil companies quite frequently enter into?

Mr. SAMPSON. Yes; I believe, Senator, that the joint ventures, particularly in the Middle East and in all OPEC countries, are against the consumer interest. I think that it is essential that the giant companies not only are seen to represent the consumer interest, but that they are acting in that interest. And so long as they have those joint ventures, which have such close relationships with the governments themselves, that their actual interests are bound to be in doubt. And I think whatever you may do within the United States in terms of divestiture, I think you will find that the question of the relationship between the companies and the producing countries abroad will remain an essential one because it is, after all, that that, at the moment, fixes the world price, and it is there that the company's character is, in itself, formed.

Senator ABOUREZK. There was once a rationale—according to some of the writing in your book—by the U.S. Government that the oil companies were important to our Middle East foreign policy. Assuming that that rationale did exist, that it was really there, does it still exist in 1976?

Mr. SAMPSON. Senator, I maintain that that situation has been virtually turned on its head.

I think there was a time, very likely, when it was in the interest of the United States and the European governments, at least in the short term, to have very strong companies which could, in effect, to put it bluntly, could bully the Arabs into accepting what was a very low price of oil. And all the evidence of the sixties suggests that that strong power of those companies was fairly heavily exploited in that direction. And they were able, of course, in the case of Iran in 1951 to 1953, they were able to boycott a country because they nationalized their oil and took no oil at all out of Iran for those 2 or 3 years. That, I think, was an example of the kind of power that was exerted by the companies, if you like, on behalf of their governments, to maintain the

low price and to insist that they, themselves, have access and control to the market.

I think that situation is now precisely turned around. I think it is like a gun on a table which has simply been turned around and used by the other side because the interests now of the producing countries are, themselves, to make use of integrated companies to make certain that they have the market and the outlet for the oil that they are selling at a high price. I think that whole argument for having integrated companies, for regarding them as being part of American foreign policy in the national interest, I think that is entirely negated ever since 1973, if only because, as we saw at that time, the companies had ceased to have a bargaining power on that crucial question.

Senator ABOUREZK. Thank you.

Senator TUNNEY. Mr. Chumbris has a few questions.

Mr. CHUMBRIS. I just have one. I want to get back to where you pointed out Iran, for example, in the fifties. Well, it was not always that way, was it? Iran and all of the Middle East oil areas originally were dominated by the British, the French, the Dutch, and the Turkish Petroleum Co., et cetera. And the United States did not get into this picture until the Secretary of State negotiated with England and the other countries after World War I. The U.S. Secretary of State said, "Now, look we were allies. We helped you to win this war, and we want a piece of the oil action for our own domestic security and protection," is that correct?

Mr. SAMPSON. That is correct.

Mr. CHUMBRIS. And that was in the Federal Trade Commission Report of 1951–52 that you were referring to earlier.

Mr. SAMPSON. Correct.

Mr. CHUMBRIS. So slowly, but slowly, the Secretary of State—at the request of Standard Oil of New Jersey—said, "We cannot arrange exploration for oil in Middle East areas for you alone, but we can do it for a group of American companies. We must do it for as many companies as we can." So that is how they started. First SoCal took over one of the leases, and they brought in Texaco. Later it was enlarged to other countries. Same thing in Saudi Arabia, and Kuwait, where Gulf Oil Co. may have had a piece of it, and they brought in somebody else.

Let's say the King of Iran, or the OPEC itself, will say, "This divestiture bill, if it becomes law, becomes so complicated for us, we do not want to fool with it now. We will just see if BP and Shell cannot handle it by themselves and take over these areas. We will just form other combines and bring new people into it who are not affected by such a law as contemplated in S. 2387." And then the United States will lose all of the benefits from that. OPEC has the power to do so, do they not?

Mr. SAMPSON. I think your historical analysis was quite correct. And I do not want to suggest I am casting the Americans as the villains of the peace in this respect at all.

And I think, at the moment, everything that the producing countries have done suggests that they are extremely concerned at all cost to preserve their outlets to the West, that there are not great markets lurking in the East or elsewhere. And their preoccupation is to make

certain that they will continue to have those markets and outlets in the United States and Europe. I do not believe that if those combines, the consortia, were to be broken up, there was any reason why the countries should, in fact, desire then to move right away from that western connection, because after all, the diplomatic relationships, in many other ways, are tremendously important.

And, indeed it may, I suggest, go in the other direction; that in the particular case of Iran today—it may well be the Iranians who wish to sell more oil, and feel both bitter and frustrated by the cuts that they have suffered over the last few months in their production—they, themselves, may wish in the end to sell oil to more countries than are represented in that single Iranian consortium, which only really effectually represents the seven or eight giant companies and a few independents. So I do not believe this is going to produce a major diplomatic crises with the producing countries. In fact, it might, in the long run, make the relationship easier rather than more brittle.

Mr. Chumbris. And just one more thing, on the same point, because the chairman yielded only for this question. I may have some other questions later, but what concerns some people, and it was reflected in the earlier hearings, we really do not know, because we really have not had much expert testimony thus far, what the foreign implications may be of this bill if there is a divestiture. How far would this law go? Would it bring in Shell and BP, or any other oil company, integrated or not integrated, that is not an American based company? And if so, would that place our companies at a disadvantage? One person, who came from London, has been quoted as saying that he talked to one of the big companies that is not an American based company. The impact of this proposed law he says is: "Well, we will be No. 1." He is not No. 1 now, but he will be No. 1 if this divestiture bill comes into effect. So whether that is a true statement or not, we still have not had much evidence to show what the extraterritorial impact of this law may be.

Mr. Sampson. I recall that Mr. Tavoulareas, in his testimony, suggested that if you were to move against the big companies here, that the big companies in Europe, particularly Shell, would benefit; that Shell would become the biggest company instead of Exxon. And there would be no great change in that respect. He also, I think, stated that there was no strong feeling outside America in terms of trying to break up, or limit the big companies. I do not believe that is true. There have been a succession of antitrust movements in Europe, particularly since 1973, and particularly now in Britain, and in Holland, too. Since the North Sea development, the whole relationship between governments and companies has become rather closer to the American relationship in terms, if I may say so, of a general sense of distrust.

So that I do not think Mr. Tavoulareas is correct. With respect to him, while I do respect his opinion, I do not think he is correct in suggesting that outside America, the giant companies enjoy general acceptance. I think the concern both about their size, and about their control of the market is also very great both in Britain and the rest of Europe, and certainly in Japan.

Mr. Chumbris. But Fred Weston testified before this subcommittee on Hart's bill, S. 1959, that while we are trying to divest and decon-

centrate our industries, the European and world of nations are, by their governments, helping the companies to become more concentrated. And he says that within 5 years, if we deconcentrated and they were allowed to continue to concentrate, that those foreign companies will become larger than the American companies. And that is in our testimony by Dr. Fred Weston of the University of Southern California.

Mr. SAMPSON. But this is a kind of vicious circle, is it not? The reason why Shell was created and merged between the Royal Dutch side and the Shell side was in order to compete with Standard Oil, which was then a giant so great that the Europeans felt they had to have a giant to compete with it. The main incentive for the mergers, whether in oil companies or in other industries in Europe, has been, for the last 10 years, the need to compete with the American giants.

If you are going to move in the other direction, as I personally hope you are going to, then that motivation is going to be very different. And I think in the long run, of course, this is bound to lead to a much closer cooperation between your own antitrust policy and your own Antitrust Division, and the antitrust division in Brussels, and in Japan, and in Germany, which is probably the most effective. And this, I think, is one of the most interesting results of the oil crises of 1973, that that did, in fact, produce a waive of antitrust cases throughout the whole of the Western World, which showed the same kind of skepticism and concern about the role of giant companies in all parts of the world.

So, of course, it is true that there is some kind of, at the moment, sense of moving in both directions. But I think that is basically because we, in Europe, and Japan too, have a great fear of the sheer size of American companies.

Mr. CHUMBRIS. Thank you. We will get back to you later.

Senator TUNNEY. I might just say, as a footnote here, that we would have the ability in this country to have substantial impact on the activities of BP and Shell, because it would be clear that we would have the right to legislate a divestiture of their interests in this country. If they maintained the vertical integrated structure overseas, and we could split off their production end from the other three components of the oil industry in this country, inasmuch as we consume about 35 percent of the oil consumed in the world, if they did not play according to the rules that were established by the Congress, and by the laws of the land, they would stand to lose substantial opportunity for business in this country.

Mr. SAMPSON. I think that is correct, Senator. And I think that it is quite clear that throughout the whole relationship between, for instance, the North Sea and Alaska, where there are two fields of exploration, the scope for a measurre of bargaining between the United States and Britain has been very great. But basically, of course, the Americans have said, unless you let us into the North Sea on reasonable terms, we will have to take some action against BP in Alaska. But the element of diplomatic bargaining has always been present in such oil questions. And, I am sure, it will be present in any antitrust policy at the same time.

Senator TUNNEY. There are many, many questions I could ask you, Mr. Sampson, but I am afraid that, as is always the case with these

hearings, there is never enough time to interrogate a witness who is as well informed as you are with all the various questions that could come to mind. But there are two other questions that I would like to address before I yield to anyone else who wants to question you.

You pointed out quite persuasively how the prorationing function is being performed for OPEC by the international companies. If the companies were no longer in a position to perform this service, assuming there was antitrust legislation passed, what assurance do we have that OPEC would not perform the function for itself?

Mr. SAMPSON. Senator, we, I think, saw certain attempts in the sixties, after OPEC was first formed. There were, in fact, several attempts by the OPEC countries to devise a system of prorationing, or programing as they sometimes called it, whereby they would allocate the production between themselves. And they always failed. They have tried again recently to devise their own system, because, of course, they are conscious of this weakness. But for them to do so, of course, does require them to establish a yardstick, a reason, a rationale behind those cuts in production. And they are always bound to be at loggerheads, I believe, as to how they shall decide.

Because, for instance, the position of Saudi Arabia, as the biggest producer, and Iran, as the second biggest producer, is basically almost opposite because the Iranians have a very large population of about 32 million, whereas the Saudis have a very small one. So the Iranians will always argue that the production should be in keeping with the population, and the Saudis will tend to argue that it should be in keeping either with the total reserves or with the potential production at the time.

I think all the indications so far have suggested that OPEC not only has failed to devise its own prorationing system, but would not be able to do so in the future, that the sheer conflict of personalities and ambitions is also, of course, very great; the basic difficulty is that the Saudis and the Iranians are, in the end, competing for the dominant position in, probably the Persian Gulf, but certainly in their particular part of the Middle East. And whoever gets the most production will get the biggest income. So for those two countries to be able, in themselves, to agree is very unlikely, I believe, to happen.

Senator TUNNEY. Is is not true that even if the OPEC cartel cannot adopt a formal prorationing mechanism, Saudi Arabia will, by itself, be able to keep prices up by simply reducing production? As you indicated, Saudi Arabia has the ability, without hurting itself too much economically, to reduce its production from 8 million, 9 million barrels a day down to 3 million barrels a day; is that not correct?

Mr. SAMPSON. I think it is true, Senator. As I said in my statement, Saudi Arabia is the key to the OPEC in that sense. It is playing the role that Texas really played in the thirties when you had a similar problem of potential overproduction. And Sheikh Yamani has made it clear that he is prepared to cut down. But it is also true, as Senator Abourezk mentioned earlier, that in Saudi Arabia, too, that it is the companies that perform the function for them. And the fact that production is cut in Saudi Arabia is not in the first place at the initiative of the Saudis; it is at the initiative of the companies.

There is also a great question, and will be an increasing question, as to how far the Saudis will wish to bring their production right

down to 3 million barrels because as we all know, they have very ambitious plans for their own development. They do have great ambitions, not only internally, but externally, in terms of foreign aid and support for other Arab countries. All these countries have found—most notably Iran, but even Abu Dhabi, a very rich little country—that they very quickly acquire, like all rich men, obligations and general reasons for spending their money, which then, of course, make them very reluctant to cut production and therefore, to cut their revenue.

Senator TUNNEY. Do you think that the Saudis would dare run the political risk of supporting the price by themselves?

Mr. SAMPSON. I think that it would be very difficult for them to actually achieve. Of course, the current situation with Iran, again, is interesting in this respect. And what would happen if the Iranians were to decide to increase their production spectacularly by bringing the price down, exactly what the Saudi position then would be is interesting to speculate about. And it does appear, from the last OPEC meeting at least, that it was then the Saudis who did virtually dictate the oil prirce. On the other hand, it is equally clear, I think, in December 1973 when the price was quadrupled, that that was done really at the initiative and the instigation of the Shah. And that the Saudis, at that time, would have preferred to have a lower price.

Senator TUNNEY. Well, just a side point. The logic may appear on the surface to be a bit fragile, but I think it holds up. That our failure to enforce antitrust policy on the international oil companies and by so doing, in my view, enabling the OPEC cartel to remain in business and be able to maintain the high prices, has had the effect, in addition, of making the American consumers and the consumers in Europe the supporters of the large scale arms buildup in the Middle East. Because Iran could, in no way, afford to buy $4 billion worth of arms, as she did last year, if it were not for the fact that she has the oil revenue. And she would not have the oil revenue that she has if it were not for the cartel. And in my view, the cartel could not hold up if it were not for the international companies supporting it, and allocating crude throughout the world, and lifting crude from producing companies according to whatever secret formula they have developed.

Now, that may be somewhat fragile logic, as I said, on the surface, but I cannot help but feel, if you follow it through, that it has great merit to it. Do you have any comment?

Mr. SAMPSON. Senator, I think that is correct. Moreover, I think it is interesting to look back at a year ago when many of us, in Europe and in the States, were much concerned about the effects of the petrodollar surplus, and the whole challenge to the economic system. We are now much less worried about that, and partly, of course, because we have successfully exported manufactured goods, and particularly arms, to the Middle East. And this, of course, may conceal our own economic difficulties because we have, to some extent, been able to trade the two. We have been able to trade arms for oil, but it does not in any way belittle the seriousness of the change of balance. Of all the exports with which to compensate the buying of oil, arms seems to be the most undesirable and dangerous.

Senator TUNNEY. Yes. The most easiest commodity, manufactured commodity, for underdeveloped countries to consume, and to purchase, and to utilize.

I just wonder if you have any knowledge as to what the effect of the OPEC pricing has been on the lesser developed countries of the world?

Mr. SAMPSON. Well, I think, Senator all of us have perhaps—or many of us have tended to neglect that part of the problem which is the most important part. And, of course, the West has become less concerned with OPEC for the reasons we have stated; that they have been able to export manufactured goods.

Whereas, the underdeveloped world has now suffered doubly, it suffered both because it has had to pay a much higher price for the oil itself, and incidentally, most critically for the fertilizers that come from oil. But also, of course, they have had to pay a higher price for the manufactured goods because those, themselves, have gone up in price partly as a consequence of the oil price; partly because of the general inflation.

So the effects on the Third World have been, I think, catastrophic, and have been in general very much neglected by us in the West. Of course, it is true, as the OPEC members say, that they have themselves been contributing aid to the developing world on a fairly spectacular scale. And that is still staying fairly high up. But that does not, of course, negate the fact that the Third World has lost far more in terms of the high price of oil, than they have been given back in terms of aid and other forms of assistance from the OPEC countries.

I think in any system that we might try to devise in the end for an equitable control of the oil price, and allocation of oil, I think it is the question of the Third World, which is by far the most critical. And that perhaps we in the West tend to lose sight of the intense seriousness of that problem for those countries.

Senator TUNNEY. Thank you. Mr. Chumbris?

Mr. CHUMBRIS. Thank you, Mr. Chairman.

Mr. Sampson, it is good to see you again. I had the privilege of meeting you, and visiting with you at your conference with Dr. Neil Jacoby. Friday, a week ago. And I listened to both of you discuss the pros and cons of these issues.

While I was attending, as a speaker, a multinational corporation conference, one of the speakers made it known that multinational corporations find themselves in a position—of the ones based in this country—that half of their business may be domestic, and half of it may be international. And they find that when they operate in Germany, England, and so forth, they have the loyalties for those countries, and they participate just like the corporations do in this country. They join the charitable groups, and the chambers of commerce, et cetera. The reason I bring that up is, you mentioned where do loyalties lie. It was Mr. Tavoulareas, who pointed out that the com-

panies look upon themselves as trying to represent equally the consuming nations as well as the producing nations; that is the only way that they could do their job under the situation that they now face.

And so I just wanted to make that point about where do loyalties lie. You state in your paper so well, that these people are experts over there, and they participate. They have helped these countries grow civically, businesswise and everything else. And it would appear that they have to show some loyalty to that country, as well as to their native country, United States, or England, or wherever they may be coming from; would you not agree?

Mr. SAMPSON. I would certainly agree. And I do not want to suggest that this is a unique problem for the oil industry. Of course, it is true of any genuinely multinational company that it will have obligations in many different countries. But I think it is also worth recalling that a topheavy dependence, particularly in foreign policy, on a critical part of a multinational empire, can become extremely dangerous. And the most obvious precedent for that was the period in 1940 when many American corporations did find themselves with huge industries inside Nazi Germany, which they were extremely reluctant to move against, which certainly were, for a time, helping Hitler's war effort.

I think that without in any way trying to suggest that the oil company situation is at all comparable to that, that I think present the kind of—if you like— caricature, and the ultimate danger of conflicting loyalties, which points to some of the weaknesses in the concept of multination companies being totally without any kind of discrimination in their allocation of loyalties. I think it is well to bear that in mind to some extent.

The other point I would like to make is that I do believe that the American corporations, and also the British ones, particularly BP, I think, have failed to internationalize their character at the top in such a way that might make them, in the end, more acceptable in the long run both to countries abroad, and of course, to their public opinion at home. And there again, I think the concept of a public director has a rather special interest. It is conceivable, I think, that if Exxon or Mobil were able to convince the rest of the world that they really were sensitive in a rather more profound way to world trends, that they would become more acceptable in foreign countries; and that the title of multinational corporation, or as they sometimes call themselves, the united nations of oil, might be rather more convincing in that case.

Whereas, in fact, I think we find that, in general, the big oil companies continue to be controlled at the top by people from—not particularly just one country, but from one State, and from one particular industry, and one secretary of that industry.

Senator TUNNEY. Thank you very much, Mr. Sampson. Are there any more questions?

Mr. VAUGHN. Mr. Sampson, I have just one question. Worrying about the actual mechanics of legislation like S. 2387, let us suppose that the multinational companies were to decide—particularly in view of the price controls put on crude oil production—that what they would like to retain would be the marketing operation, sell off their assets in the other functions, and then use the oil that they get from the Mideast region, refine it abroad, and then divert some of those refined products to the United States. If that scenario were to hold up, it would seem to me that it would result in the continued connivance, or whatever way you want to describe it, between the OPEC producing countries and the multinational corporations. It would still leave the U.S. consumers at the mercy of this diabolical scheme, and it would also tend to undercut the production of the United States from domestic sources so that the monopoly power of the OPEC producers would therefore increase.

And I am worried that the actual results of S. 2387 will be opposite to the stated intent of the legislation. I was wondering if you would care to comment on that possibility?

Mr. SAMPSON. They would be opposite in terms of price? Did you mean that the price would be bid up rather than down?

Mr. VAUGHN. Well, my point is that, if the domestic companies in the United States, which also have multinational connections, decide that they will just keep the marketing facilities and perhaps expand upon them, divest themselves of the production and so forth as is required in the legislation, and then for their source of supply rely upon their connections with the OPEC countries. And this would still make available to the OPEC producers the management expertise that these companies have. And that, therefore, the consumer in the United States would find that the people supplying ultimately his product are still abroad, still centered in OPEC; and not only that, but the contribution made by domestic output in this country has perhaps declined because of such things as price controls on crude.

Mr. SAMPSON. I do not think any scheme for divestiture will remove the dependence of the United States on the OPEC countries in the Middle East because all the figures show that, I think, whatever rearrangement of companies that you may have, the U.S. oil production will not be able to increase probably at all—certainly not increase sufficiently to replace that supply—so that problem will certainly remain.

But I would suggest that if the joint ventures, and if the long-term contracts with the producing countries are effectively limited, if not broken up, that this would create a more competitive situation there, which should, I think, in the long run—at any rate—make the price more flexible.

I think the question of the markets remains an interesting one in the sense that if one looks back to the period after 1911, when that divestiture was achieved, it was, of course, the fact that Standard Oil of New Jersey still retained enormous power over the markets that enabled it to retain its supremacy, and to do that, it dealt with other companies because they desperately needed to have an outlet for whatever oil they might discover, and whatever they might buy elsewhere. I think that problem was very strong then. But I am not convinced that if the majors were now simply restricted to their markets, I think

you would have sufficiently effective marketing competition inside the United States to create pretty effective competition in their attempts to buy cheaper oil abroad.

Mr. VAUGHN. Well, but under my scenario, if Mobil was part of Aramco, and Mobil has just kept their marketing facilities in the United States divested, their crude sources in the United States, their pipelines and all the rest, would they not still have marketing access into the United States? That they could still, therefore, plan how much output they wanted to take out of the Saudi Arabian oilfields, and how much they want then to ship to the United States, would not that machinery still be in place, and the United States consumer would still be the subject of the whims of the OPEC cartel every bit as much as they are now, and perhaps more if at the same time the act of divestiture has discouraged domestic output; and also in conjunction with the incentive—or lack of incentive given by price controls here in this country on domestic crude.

Mr. BANTA. I think we should say here, that the bill, as drafted, would prohibit a link between marketing and crude production.

Mr. SAMPSON. I also think the question of long-term contracts remains a very essential one here. That there is obviously no point—at least, it seems to me to be very little point—in having divestiture between crude production and marketing of long-tern contracts. Particularly, the contract with the OPEC countries, in effect, negates that development because obviously those contracts will serve to produce very close links between the two sides. And I think whatever legislation was envisioned with respect to overseas ventures, that the contracts will be a critical part of it.

Mr. VAUGHN. Thank you, Mr. Chairman.

Senator TUNNEY. Thank you. Thank you, again, Mr. Sampson. We appreciate your testimony, it was very, very good.

Our next witness is Mr. Jesse Calhoon, who is president of the National Marine Engineers Beneficial Association, who is going to be accompanied by Mr. Stanley Ruttenberg of Ruttenberg & Associates.

I would like to say, I would like to congratulate you, Mr. Calhoon, on the fact that your association, the Marine Engineers Association, has been willing to make money available to produce a book for the edification of the public on energy. I have one of them here, "The Energy Cartel—Big Oil Versus the Public Interest," which Mr. Ruttenberg helped produce, and it lays out, I think in a very clear fashion the problems that we face with the energy cartel. And I think that the public spirit was behind your decision to finance the publication of this book and other literature certainly has been in the national interest.

Mr. CALHOON. Thank you, Mr. Tunney.

Senator TUNNEY. Please, proceed.

STATEMENT OF JESSE M. CALHOON, PRESIDENT, NATIONAL MARINE ENGINEERS BENEFICIAL ASSOCIATION, ACCOMPANIED BY STANLEY RUTTENBERG, RUTTENBERG, FRIEDMAN, KILGALLON, GUTCHESS & ASSOCIATION, INC.

Mr. CALHOON. Mr. Chairman, on behalf of the National Marine Engineers Beneficial Association, I welcome this opportunity to pre-

sent testimony regarding the multinational aspects of U.S. oil companies. Many of the members of our union are engaged in the marine transportation of crude oil and petroleum products. We have watched with concern as the multinational oil companies have shifted to foreign flagships. This represents not only a loss of jobs for American men and women, it is also an example of the willingness of the multinationals to maximize their profits at the expense of the American taxpayer and consumer.

For several of the major U.S. oil companies, foreign operations form a major portion of their business. Five of these companies produce more than 83 percent of their total crude oil and condensate production outside of the United States.[1] More than half of their foreign production, 52.7 percent to be exact, takes place in the Middle East. These major oil companies are fully integrated. They own tankers to ship the oil they lift from the ground across the oceans to pipelines to carry oil across land. They own refineries in the United States, the Caribbean, Europe, and elsewhere. And they own the marketing and distribution network by which their refined products reach wholesale and retail markets. In short, the major oil companies have complete control from the extraction of the raw material to the sale of the final product. Of course, the American consumer cannot see the great depth of this corporate integration.

Motorists fume when gasoline prices go up 20 or more cents a gallon over a 2-year period. The homeowner complains when utility bills triple. They need no economic analysis to tell them that these price increases are excessive and unjustified; but they also know that there is someone to blame other than the gas station operator, and the manager of the local utility company. They do not buy the efforts of the oil companies, backed by the Nixon and Ford administrations, to lay the blame for higher prices at the feet of the oil-producing countries. OPEC is one of the most insidious cartels in world history, but the primary responsibility for America's excess energy costs lies with a system which has permitted the multinational oil companies to hold the legitimate energy needs of the American people ransom to their desire for ever-higher profits.

The history of the U.S. oil company involvement in foreign crude oil ventures has been cited in testimony before this subcommittee and in several excellent publications. That history has shown that the multinational oil companies have been aided both by the U.S. Government's conscious efforts to promote their interests abroad, and by favorable American tax policies. It also shows that the multinational oil companies and the oil-producing countries have been able to establish a community of interest whereby both have benefited from higher oil profits.

The oil companies have complained that their foreign governments are quickly taking over control of their oil interests abroad, and that along with loss of control, they will also lose access to most, if not all, of their profits from foreign operations. Nothing can be further from the truth. The oil companies earned far more profits on their reduced equity interest in foreign oil in 1974 than they amassed on their 100-

[1] See table 1, p. 2201.

percent equity interest in 1969. While rising oil prices helped to increase profits, the most important factor was the tax credit. While the oil companies tell us how much they must pay to foreign governments in taxes, the fact is that U.S. law has allowed them a dollar-for-dollar credit on their domestic tax return for all foreign taxes paid. Because of the foreign tax credit, the increase in producing country taxes between 1973 and 1974 enabled the multinational oil companies to increase their profit per barrel of foreign-produced oil from about 52 cents to $1.81. Even more important, these increases in foreign oil prices also caused increases in domestic crude oil prices.

In domestic oil, the multinational oil companies were able to realize even more staggering profit increases. Between 1972 and the end of 1974, the average price of a barrel of domestic oil increased by just over 100 percent. Profits per barrel of domestic oil, however, increased by more than 300 percent. This windfall profit was made possible as a direct result of the increases in foreign oil prices. And the increase in foreign oil prices was a direct result of the collusion between the producing countries and the multinational oil companies who both saw that they had much to gain from higher oil prices.

The financial news last week was filled with reports of decreased earnings reported by the major oil companies. Reading beyond the headlines, however, one discovers that the picture is not bleak at all. Exxon's worldwide petroleum and natural gas profits for 1975 were down 7 percent, but profits from domestic operation was up 10 percent. Many oil companies are reporting significant increases in fourth-quarter profits as compared to the same period in 1974. What is more, return on stockholders' equity for the major oil companies appears to be holding at a respectable 14 to 15 percent.

What is becoming evident is that reduced oil company profits in 1975 were not due so much to increased foreign and domestic taxes, as the oil industry claims, but to a depressed economy both here in the United States and throughout the world. This conclusion is supported in a study published last fall by the subcommittee on Energy of the Joint Economic Committee.[1] That study noted that, for the first half of 1975, U.S. refineries ran at less than 85 percent of capacity, the lowest level in nearly two decades, except for the period of Arab oil embargo. This underutilization of capacity had a serious impact on the average cost of production in an industry which has large fixed costs. With a return to 90 percent refinery capacity utilization, the oil companies should be experiencing 14 to 15 percent return on equity. Full economic recovery would boost return to about 16 percent. The windfall year of 1974 may not be soon repeated, but the potential for high profits in the oil industry remains quite good.

The foreign production of crude oil has been dominated by the Seven Sisters: Exxon, Gulf, Texaco, Mobil, SoCal, British Petroleum, and Shell. Five of these are major U.S. oil companies. Beginning with the Iranian consortium of 1954, other oil companies—the so-called independents—entered foreign oil production. Their entry helped produce a glut of foreign oil which began to force down prices by 1957. The independents showed that they could undercut the big

[1] "Achieving the Goals of the Employment Act of 1946—Thirtieth Anniversary Review, vol. 2, Energy, Joint Economic Committee, September 26, 1975.

oil companies and still make money. As a result of this glut of foreign oil, it was domestic oil from east Texas which actually determined the price which foreign oil could command in the United States. When foreign oil had a posted price of $2 to $2.30 a barrel, its actual market value in the United States was closer to $3 to $3.40 a barrel price for domestic oil. Strict quotas on imported oil made this possible. Nevertheless, the glut of oil remained a major problem for the Seven Sisters. Profits remained more than adequate, but there was less assurance about their ability to maintain their markets.

An 18 cent posted price cut in February 1959 did not solve the problem. In August of 1960, Exxon announced a second cut of 10 cents. Because of the interdependence of all of the oil companies with foreign operations, this price cut was adopted industrywide. The oil industry was now united in its confrontation with the producing countries. The first price reduction in 1959 had given rise to the convening of the first Arab Petroleum Congress. The 1960 reduction gave birth to OPEC. And it was OPEC which assured that there would be no more price cuts.

As much confrontation between the oil companies and the governments of the producing countries were involved in events of this period, events both before and after 1960 had demonstrated to both sides that they had much to gain from cooperation. In 1951, the oil companies, with the assistance of the U.S. Government, showed the producing countries how they could extract additional money from the oil companies, while at the same time enabling those companies to pay less U.S. taxes. This was done when the producing countries changed their levies on oil company production from a royalty to a tax.

In the post-1960 period, participation arrangements were to become the next issue upon which the interests of the oil companies and the producing countries found harmony. Prior to participation agreements, all of the oil pumped belonged to the oil companies, who made a payment to the producing government based on the number of barrels produced. Under participation agreements, the oil companies turned over some portion of the oil they produced to the government of the country in which they are producing. They then agreed to buy back most of the participation oil at a price significantly higher than the payment which would have formerly been due on that oil. The oil companies have not fared badly under participation agreements. As I stated earlier in my testimony, they have been able to more than triple their per barrel profits for foreign oil.

With the help of the foreign tax credit, they are able to earn more profits on their 40 percent interest in oil than they were earning on a 100-percent interest 5 years ago. One might think that the oil companies would be grateful to the United States for enacting such beneficial tax laws, but their gratitude appears more directed toward the producing countries, with whose cooperation they have been able to amass staggering profits.

In their mutual quest for ever-higher oil prices, the oil companies have cooperated with OPEC in holding down production so that prices will remain high. For the first time in 30 years, Mideast oil flow was actually down 10.7 percent in 1975. For principal oil producers, the decrease was even more staggering. Saudi Arabian pro-

duction was down 17 percent, production in Iran was down 11 percent, and production in Kuwait was down 19 percent. These production cutbacks have had the active cooperation of the multinational oil companies.

Let no one think that complete nationalization of foreign oil interests will necessarily mean an end to the convenient relationship between the multinationals and the producing countries. The producing countries will continue to strive for a stable market, by which they mean higher oil prices. They have no interest in taking any action which would result in one producing country competing with another. The formidable network of relationships between the multinational oil companies acts as an effective barrier to competition. As such, the producing countries have much to benefit from continuing involvement of the oil companies in production and other phases of petroleum operations.

There are joint ventures and mutual dependencies among the oil companies throughout the world which result in the stifling of competition and the promotion of higher prices. For their part, the oil companies have an identical interest in maintaining higher prices. And they seem bent upon a dependence on OPEC because of their desire for preferential treatment and an assured supply of crude oil.

The discussions now taking place in Saudi Arabia leading toward that country's express desire to nationalize private oil interests in that country, may well be centered on finding an arrangement which will permit the oil companies to continue to make use of the foreign tax credits. The tax credit as it applies to the multinational oil companies is an excellent example of the partnership of the producing countries and the oil companies and the willingness of the U.S. Government to assist the oil industry in its quest for ever-higher profits. With the assistance of the representative of the U.S. Treasury Department, the oil companies reached agreement with Saudi Arabia in 1951 to increase their per barrel payments; but to change them from a royalty, which is not tax deductible, to an income tax, which is.

That decision was nothing short of a massive raid on the U.S. Treasury.[1] There may yet be a second raid on the U.S. Treasury. Last March, Congress passed the Tax Reduction Act of 1975. Included in that legislation was a provision by which Congress thought that it was placing effective restrictions on the use of foreign tax credits by the oil companies.

Unfortunatetly, the wording of what has become section 901(f) of the Internal Revenue Code is so vague as to leave open the very real possibility that the oil companies will continue to enjoy the benefits of foreign tax credits.

In fact, Mobil and other oil companies are already corresponding with IRS arguing that they have an economic interest in the nonequity or buy-back oil. If this contention is upheld, the multinational oil companies will be able to continue to make use of foreign tax credits even when Saudi Arabia or any other producing country takes over a 100-percent interest in the oil produced. Unless some loud voices are raised, what Congress thought it had accomplished

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[1] See table 2, p. 2201.

in 1975 will be nullified by the oil industry and the administration in 1976.

The Tax Reduction Act of 1975 did not deal with another foreign tax credit problem—that of excess foreign tax credits. Section 904(d) of the Internal Revenue Code allows the multinational oil companies to carry over excess tax credits for 5 years. These excess tax credits amount to at least 55 percent of the total foreign taxes paid by U.S. oil companies. Even if IRS eliminated the use of foreign tax credits for nonequity oil, the multinationals would be able to escape most of their U.S. income tax obligation by using up their excess tax credits. That is apparently why the Treasury Department estimated that all the foreign income provisions of the Tax Reduction Act would generate only $100 million in increased revenues during the first year, and $600 million in years thereafter. Whether the oil be controlled—or so-called equity oil—or whether it is buy-back oil, it is transported and processed through the affiliates of the major oil companies.

An important element in the ability of the integrated oil companies to increase their profits at the expense of the consumer is transfer pricing. When a company produces oil, ships the oil on its own ships, and refines it in its own refineries, there are no marketplace transactions to determine the price which should be charged for the transportation services provided. All transactions take place between affiliates of the same parent company, so all prices are transfer prices. It is clear that oil companies have a lot to gain from charging themselves as much as possible for shipping in order to maximize total profits. They do this by using an average freight rate assessment or AFRA rate.

AFRA is essentially a price-fixing scheme. Averaging in both historical and current charter rates paid by all participants in the charter market, it results in shipping rates which do not reflect average shipping costs but instead reflect the average costs of a hypothetical, nonexistent company which owns no ships of its own, which uses long-term, short-term, and spot charters in the same proportion as they exist for the entire worldwide market for tankers, and which has contracted for charters in a pattern which conforms to the average pattern for all charter contracts fixed. This hypothetical rate tends to overstate actual shipping costs for two reasons. First, AFRA fails to average in any value for ships owned by the major oil companies. Yet the reality is that most of the major oil companies have a large tanker fleet of their own.

Texaco has 205 ships with almost 20 million deadweight tons of capacity. Mobil has 132 ships with 11.3 million deadweight tons of capacity. And SoCal has 111 ships with nearly 12 million deadweight tons of capacity. These are but a few of the corporate examples of major oil companies which own substantial fleets of their own. Owned ships which were built 5 or 10 years ago reflect the substantially lower building cost at that time. Yet, in no way do these lower costs enter into the AFRA index.

Second: The AFRA rate reflects far too much emphasis on short-term and spot charters than exists in actuality. In this way, the AFRA rate seriously overstates the costs of shipping to the major integrated companies at any time when the short-term or spot charter

rates are above the rates for long-term charters. In the final analysis, the AFRA rate at most times reflects shipping costs which are substantially higher than those experienced by the major integrated oil companies. Because, under present law, shipping income is largely tax-free, the integrated oil companies can maximize their shipping profits at the expense of both the U.S. Treasury, which foregoes tax revenue, and consumers, who are forced to pay for artificially high shipping costs.

Mr. Chairman, divestiture of the major integrated oil companies will have a major impact on the economic practices which I have described. It will break the cozy relationship between the multinational oil companies and OPEC, because these companies will no longer be able to provide a complete network for transportation and distribution of oil to the marektplace. It will induce greater competition for the production of foreign oil, and thus help to lower world oil prices. This was true when the so-called independent oil companies broke into the foreign market, which had previously been the sole province of the Seven Sisters. And divestiture may also weaken the unity of OPEC by encouraging the producing countries to seek out the best possible arrangements for production, transportation, and distribution of their oil.

Finally, divestiture will go far toward eliminating the evils of transfer pricing, thus providing an additional benefit to consumers.

[Tables 1 and 2, referred to by Mr. Calhoon, follow.]

TABLE 1.—NON-U.S. OIL AND CONDENSATE PRODUCTION OF MAJOR U.S. OIL COMPANIES: 1974

[In barrels per day]

Company	Non-U.S. oil and condensate production	Non-U.S. production as a percent of total production	Mideast production as a percent of total production
Exxon	3, 865, 000	79	20
Texaco	3, 709, 000	82	61
Socal	3, 342, 300	88	27
Gulf	2, 183, 800	85	52
Mobil	2, 042, 000	83	62
Amoco	335, 000	38	13

TABLE 2.—ILLUSTRATION OF EFFECTS OF 1951 SAUDI "INCOME TAX"

	Oil revenue	To Saudi Government	To U.S. Government	To oil company
Prior to institution of tax	$1.00	0.25	0.375	0.375
After institution of tax	1.00	.55		.45

Senator TUNNEY. Thank you very much. I want to tell you how much we appreciate your testimony, Mr. Calhoon. Before getting into questions with regard to points that you made in your statement. I cannot help but note that there is a substantial problem, as some have perceived it, in having the number of domestic tankers carrying oil going down, and the impact that this might have on national security. And I know that you have been very active by fighting for legislation that would increase the number of boats flying the American flag

which would, of course, have a very salutory impact upon not only domestic security, but on the number of jobs that would be available to Americans working on such ships. Do you think that we are ever going to get such legislation through the Congress?

Mr. CALHOON. Mr. Chairman, I am sure we will get the legislation through the Congress. And I am sure we will have a President, in January 1977, that will sign it.

Senator TUNNEY. I hope so. Mr. Calhoon, I think you are right in your argument that the majors are going to do everything they can to maintain foreign oil profit. Back in 1970, the Aramco owners were making 25 cents a barrel profit, free of any U.S. taxes, on less than 4 million barrels a day of crude. Would your point be that they will be better off today still making 25 cents a barrel profit, but on 8 million barrels per day?

Mr. CALHOON. Would you like to address yourself to that?

Mr. RUTTENBERG. Well, in a sense, Senator, involved in the problem is the complicated issue of the way in which the Internal Revenue Service and the oil companies are now treating the 1975 foreign tax credit provisions. If, say, effectively one could assume that the foreign tax credit would not apply to that proportion of the buy-back oil, which the producing countries, themselves, now take in their participation agreements, then under those circumstances the amount of profits which the oil companies would get would be lower. But because the profits would be lower through that process, the oil companies are fighting vigorously. The provisions that the Congress enacted in 1975, and up to this point, have effectively prevented any implementation of what the Congress thought it was doing in March of 1975.

And I think that goes to the heart of the problem here with the Congress taking an action, the oil companies, so far, effectively muting that action and making it ineffective, and the Internal Revenue Service, up to this point, not really putting out any regulations that deal with how the money is paid for buy-back oil under these participation agreements are going to be handled; and the result is profits continue to go up. And the oil companies, because they want those higher profits and because the oil countries—the Arab countries—are interested in cooperating, our foreign policy seems to be—I wish I could prove this, but I cannot—to encourage it and to override the action of the Congress in March 1975 to do something about foreign tax credit.

Senator TUNNEY. The business of business is to make profit. What we want to make sure is that it is a competitive industry, which is generated on the basis of true competition rather than oligopoly type action.

And I think that the points that you made are good points. Every one of the international majors has made a big point of the fact that they are losing control over their foreign crude reserve. Every one of them says, therefore, that they will have to make more money downstream, which I assume they mean by that that they would have to make it in the refining market. Of course, this means higher prices in the United States; does it not?

Mr. RUTTENBERG. Yes; it certainly does, clearly.

Senator TUNNEY. Quite a bit. Do you think that within the present structure of the industry, that majors have the power to put such price increases into effect?

Mr. RUTTENBERG. I think, Senator, the fact that the oil companies do control the whole operation, from the crude oil production through transportation, through refining and marketing and distribution, gives them the advantage of being able to make the continued high exorbitant levels of profits that they have been making and, at the same time, encourages the Arab Mideastern countries to cooperate with the multinational oil corporation because the multinational oil corporation controls the entire process from production through distribution.

So that if there could be divestiture, it seems to me, at all levels, and the oil companies were forced to make their choice as to which of the four areas they want to get into, then it seems to me one would have an impact on developing some competition in and in undermining, in effect, the ability of OPEC to cooperate closely with the oil companies and thereby maintain the high price structure, which we have had.

Our tax laws are written in a way to encourage the multinational company, the oil company, to feel that higher profits are within its best interest. And the American consumers are paying the expense of it.

Senator TUNNEY. Well, one of the things that has been pointed out in the statement that you made, Mr. Calhoon, was that the 1975 profits for the oil companies were off because of the worldwide recession. And this has been ignored by industry witnesses. The Oil and Gas Journal last week reported that domestic demand in 1975 was 2.2 percent below 1974, and the forecast for 1976 is a 5.1 percent increase over 1975; rising from 2.6 percent in the first quarter to 10 percent by the last quarter. Now, do either one of you have any impression as to what this is going to do to oil company profits?

Mr. RUTTENBERG. I think the answer seems to be quite obvious, Senator. I think oil company profits which fell off—as was indicated in the statement of Mr. Calhoon, during the year 1975—from the very high levels of 1974, are beginning now to show an increased return on investment, and a return that will mean continued higher levels of profits as we move into the year 1976. And that is already showing up by comparing some of the fourth-quarter 1975 profits to fourth-quarter 1974 profits.

Mr. CALHOON. Senator, if we look at the world economic conditions—and it appears that we may have taken the first step to emerge out of this recession, depression, we have been in. If that is true, and we start out of the depression, and the slack production in the producing nation is brought back to what it was in 1974, I think it is reasonable to expect that the producing nation would, at that point, demand another tremendous increase in the price of oil, which in turn would give the oil companies another tremendous increase in their profits. So I think the American consumer—not only the American consumer, but the consumer of the free world—and the nations of the free world have only one instrument standing between them and complete domination of the Western World by the OPEC nations in collusion with the oil companies.

That only instrument is available in this country in the U.S. Congress. No other nation in the Western World is strong enough economically, and is strong enough as a consumer group, to bring these multinational oil companies and the producing nations to a halt. If this Congress does not take on this problem, we will be dominated over the rest of our lifetime by these seven oil companies and 13 producing nations, just as much dominated as if Hitler had won World War II.

Senator TUNNEY. You mentioned in your statement, Mr. Calhoon, that Mobil and the other companies are trying to get foreign tax credits continued on foreign production even after it completely nationalizes. In your mind, is there any legitimate way that the IRS could permit U.S. oil companies to claim foreign tax credits on oil which is the property of Saudi Arabia, or Venezuela, or Kuwait?

Mr. CALHOON. Mr. Chairman, I do not think there is any legitimate way, or certainly no moral way. But there was certainly no moral way that the IRS, or Treasury Department, would send an Assistant Secretary of Treasury to Saudi Arabia to write a tax law for Saudi Arabia that would rape the American Treasury of $50 million a year in 1951, but it was done. And we expect IRS to come out with some ruling on some, at least immoral grounds, that will continue the foreign tax credit. As we have pointed out in one chapter in the book, the oil companies have so infiltrated the executive department of the U.S. Government that it is very difficult to identify the regulator from the regulated.

Their open-door policy of interchanges in the agencies of the Government, of which they have a vital interest, the policies almost could be written in Chase Manhattan Bank, or Exxon.

Senator TUNNEY. Mr. Ruttenberg, do you have anything that you would like to add?

Mr. RUTTENBERG. I would only like to add one word. And it really goes to, again, the last question you raised, and a comment which I had made earlier about the foreign tax credit. I think the Congress, clearly, when it decided in March 1975 that it was going to withdraw the foreign tax credit concept from any oil which was participation oil and buy-back oil by the oil companies, that they thought that they had done away with the foreign tax credit. And a legitimate effort was made by the Congress to try to handle the problem. And now, almost a year later, we see efforts by Mobil, and others, and the Internal Revenue Service cooperating, to try to develop methods, ways, and means of nullifying what the Congress did in March 1975. And I think that is a very serious problem that ought to be looked into quite carefully.

Senator TUNNEY. Well, I want to thank you for bringing the matter up. I must tell you, I have not followed it; and until it was mentioned today, I was not aware of what was going on. So I appreciate your bringing it to the attention of the committee.

And I also want to thank you both again for the statements that you have made, and for the scholarly dissertations written. And I would hope that soon we will see a development in the committee: namely, the production of the bill which will, in effect, split up both vertically and horizontally the oil industry to make it more competitive, which I think would be a natural outflow of the hearings that

we have held and the evidence that has been presented to the committee, and an objective evaluation of that evidence. And you helped make the record. Thank you so much. As Senator Hruska announced last week, the subcommittee hearings will stand in recess at the call of the Chair.

[Whereupon, at 11:56 a.m., the proceedings were recessed at the call of the Chair.]

VERTICAL DIVESTITURE IN THE PETROLEUM INDUSTRY

WEDNESDAY, FEBRUARY 18, 1976

U.S. SENATE,
SUBCOMMITTEE ON ANTITRUST AND MONOPOLY
OF THE COMMITTEE ON THE JUDICIARY
Washington, D.C.

The subcommittee met at 9 a.m., in room S–207, U.S. Capitol Building, Hon. Roman L. Hruska presiding.

Present: Senators Hruska and Mathias.

Staff present: Walter S. Measday, chief economist; William E. Kovacic, staff member; Catherine M. McCarthy, chief clerk; Peter N. Chumbris, minority chief counsel; Garrett Vaughn, minority economist.

Senator HRUSKA. The Antitrust Subcommittee hearings will come to order.

OPENING STATEMENT OF ROMAN L. HRUSKA, U.S. SENATOR FROM THE STATE OF NEBRASKA, MEMBER OF THE SUBCOMMITTEE ON ANTITRUST AND MONOPOLY

Senator HRUSKA. Chairman Philip A. Hart today announced that this will be the final day of hearings for the Senate Antitrust and Monopoly Subcommittee's consideration of vertical divestiture in the petroleum industry.

I might say that this Senator has been instrumental in procuring the presence of the testimony of Mr. Shillito.

I recall well the hearings of 1973 on this general subject, chiefly, at that time, with the Committee on Interior, but also the hearings of 1969, when the field was very thoroughly competent.

The thrust of that situation then seemed to be an effort to try to increasse imports, because we were paying, at that time, about $2 a barrel. Chewing gum, I guess, was even increased in price at that time, as compared with its historical basis.

But the thrust seemed to be, by many people in Congress and other people, that we ought to increase these imports and cease our development of domestic production of petroleum products, and then, if anything happened, such as hostilities or if the price were increased—and attention was called at that time to the formation of OPEC, the organization of the oil petroleum export countries, and that they, in due time, would recognize their strength and do what they have since done; to wit, raise the price to five or six times what it was back in 1969 and later years—and then if the price was in-

creased, then we would go to our domestic sources and turn on the spigots of our producing wells, and we would have happiness and contentment and security.

Now, that was one view.

The other view was that the emphasis should be placed upon reducing our dependence upon imports, followed by or contemporaneously with the encouragement and the increase of our domestic production, including offshore drilling; and, in that way, subserve the interests of national security, which are paramount, because a Nation's first duty is to survive.

Now, then, the hearings were held; nothing much came out of them, although the literature developed is very useful in considering the problem today.

I well recall the cardinal place that was accorded to national security. And my recollection, further, was that there was not only a Cabinet task force but, also, at that time, we had an Office of Emergency Planning; and General Lincoln was in charge of it.

And I recall, upon review of the testimony of Mr. Shillito, together with certain of the Defense organization and, notably, Admiral Zumwalt—wasn't he chairman at that time, Mr. Shillito?

Mr. SHILLITO. He was Chief of Naval Operations.

Senator HRUSKA. Chief of Naval Operations, but later became chairman.

Mr. SHILLITO. Yes, sir. He was acting for the chairman.

Senator HRUSKA. Now, upon reviewing the series of hearings that we have on the legislation now under consideration, there was a total void, a total lack of any substantial statement; in fact, minor references, and that is all. There was no testimony on the proposition of national security.

Hence, we asked Mr. Shillito to review his experiences as Assistant Secretary of Defense—in charge of installations and logistics—and asked him to prepare such testimony as he might want to bring to us.

Our first witness is Mr. Barry J. Shillito.

STATEMENT OF BARRY J. SHILLITO, PRESIDENT, TELEDYNE RYAN AERONAUTICAL

Mr. SHILLITO. Thank you, Mr. Chairman.

My name is Barry J. Shillito. I am president of Teledyne Ryan Aeronautical, a company located in San Diego.

I am honored to be given this opportunity to appear before your committee on the most important subject of the Petroleum Industry Competition Act of 1975, S. 2387.

While I have had the occasion to testify before Congress many times, I have been out of government for a little more than 3 years and, consequently, do not have access to current government data which I believe supports my position on this matter. When I served as the Assistant Secretary of Defense for Installations and Logistics, I had occasion to be involved in the entire issue of petroleum, petroleum reserves, petroleum imports and the impact of petroleum on national security. My last appearance before the Congress relative to this matter was on January 22, 1973. At that time, I appeared before the Committee on Interior and Insular Affairs of the U.S. Senate. Ac-

companying me was Admiral Zumwalt, representing the Joint Chiefs of Staff, Commander Joe Trunz, Navy Director for Petroleum and Oil Shale Reserves and members of my staff. We gave extensive testimony on the relationship of petroleum to our national defense and also to the Nation's economy.

I was personally greatly impressed with the thoroughness of that hearing, the committee chairman, Senator Jackson, members of the committee and their staff. They were obviously concerned with our country's national security. I believe the 1973 testimony certainly remains pertinent in the light of current events and I would urge that it be considered by this committee.

My comments today are heavily influenced by my past exposure to this subject—by the recognition of the importance of petroleum to both our country's economy and its national security. My position is solely my own; it is not that of my company nor the Department of Defense.

To begin with, I want to say emphatically that I genuinely believe we have serious reason to be concerned about our national security posture. That posture, as I see it, has a very definite and critical relationship to our ability to import the petroleum supplies that are so necessary to our economy, indeed to our whole national economic and defense posture.

Without question, our country has assumed, or at least is very rapidly assuming, the No. 2 position, militarily, as regard the Soviet Union. This can be supported by almost any set of statistics or any meaningful intelligence data you might choose to gather—defense expenditures, military manpower, aircraft, tanks, ICBM's, SLBM's, you name it. In fact, most authorities tell us that even with the extensive SALT negotiations, the U.S.S.R. has probably at least a threefold advantage in total ballistic missile throw weight.

The Russians are rapidly catching up with us in accuracy and in multiple reentry vehicle capabilities and, most importantly, have taken civil defense-type protective measures that would insure the U.S.S.R a fraction of the population losses which the United States would incur in the event of a nuclear exchange. Moreover, the Soviet Navy has built up conventional forces capable of challenging the United States anywhere in the world.

Russia's very extensive and modern submarine force could make it extremely difficult, if not impossible, to maintain the sea lanes so essential to the continued supply of petroleum to this country and to our allies. Should you have any question as to the Soviet's superiority, or imminent superiority, I would urge this committee to interrogate those most knowledgeable about this subject.

Next, I would submit that while maintaining ongoing discussions and a meaningful dialog with the Soviet Union are imperative, we must also recognize that we have very extensive experience in our dealings with the Soviets that should clearly suggest that their desire for furtherance of their ideology leaves their veracity open to question.

Détente means something entirely different to the Soviet leadership than it does to the people of the United States. In this country, we think of détente in terms of relaxed international tensions, a period in which the Soviets and the United States will cooperate to stabilize

the international situation and enhance the prospects for long-term peace. It should be obvious by now, however, that Soviet leadership has a completely different interpretation of détente. It appears that the Soviets intend to use détente to facilitate progress toward ultimate dominance of the West. The Soviets have violated the SALT I agreements, at least in principle, and have built up their strategic forces at a furious pace. They actively assisted North Vietnam, ignoring the terms of the Paris Peace Accord, while South Vietnam was being overrun.

Russians are now engaged in taking over Angola by proxy. Based on current trends, I can only conclude that the Soviets will utilize the euphoria of détente in the United States to achieve a superior military posture in the shortest possible time. I am terribly concerned as to how they will use their superiority.

Now, to the specifics of this pending legislation, S. 2387. Our Nation's energy problems have been recognized by genuinely concerned and knowledgeable persons for at least 7 years. In fact, the Cabinet Task Force of 1969, of which I was a member, recognized many of the problems, though too much attention was given at that time to increasing imports rather than concentrating on U.S. energy self-sufficiency. In essence, we spent too much time working the wrong problem. Oil, of course, is going to remain the major source for meeting our country's energy demands for many years to come. Like most people, I am quite disturbed that, as a country, we have not taken more positive action to resolve our energy problems. In 1972, I had high hopes there would be a change for the better. Based on our progress, or lack of it in the years since, I find myself today more pessimistic than ever.

I am very concerned that S. 2387 does not contain national security provisions or recognize possible national security implications. This void suggests to me that proponents of S. 2387 feel that national security is not a matter of concern in considering this legislation. Although I cannot accurately predict the full extent of the bill's impact on national security, I am, nonetheless, convinced that it could well have a decided adverse effect. Even if I am wrong, I still believe that our country's national security is of such importance that additional time must be allowed to permit our very best qualified analysts to assess the national security impact of this type of legislation before any further consideration is given to S. 2387.

In an overly simplified way, S. 2387 stands for the proposition that insufficient competition exists in the present petroleum industry and that fragmenting this industry will increase competition to the benefit of all of us. I cannot accept this thesis. Without question, the major petroleum companies have done a terribly poor job of putting the facts before the American people. All of us have been subjected to increased gasoline prices. We have been made aware of increased oil company profits.

The conclusion for many is that somewhere, somehow, a major cartel is at work on the international front—to our economic detriment. Since many Americans feel this way, the issue has become particularly attractive from a political standpoint. Oil companies now appear to be trying to do a better job of public relations, but an already perturbed American public is not going to be easily persuaded.

I don't believe, and it is going to take these oil companies a long time to improve the image they initially created. In fact, I look back at the July 4, 1975 long weekend when higher crude prices were introduced, just at a time when many Americans were traveling. You had to wonder if the oil industry was not somehow dedicated to destroying what little good might be left of its image.

Oil companies, the Congress and the executive branch all share responsibility to insure that the public understands the true situation. For example, we must understand such things as the true profit picture of these large companies in spite of the poor public relations job they have done. And we must realize that return on stockholders' equity of the top domestic oil companies have averaged only 10.2 percent since 1954, slightly lower than the rest of American industry.

Smaller firms, engaged only in production, showed better profit rates than the large integrated oil companies. The high profit year of 1974 netted the international oil companies 13.3 percent on stockholders' equity—indeed a very large percentage gain—but it was publicly portrayed completely out of proportion.

Most other industries enjoying similar profit increases received very little publicity. Oil company profits were several points higher than the all-industry medians, but well below the profit rates of such industries as coal, chemicals, drugs and trucking.

Most people still do not understand that the vast majority of oil company profits in 1974 were the result of increased value of inventory in company logistics pipelines. Once pipeline inventories were consumed, profits went back to historical norms. These "normal year profits" are not out of line with the balance of American industry.

This inflation of inventory value is a very normal thing and can happen in any company. It was this fundamental point that led many other companies to change the costing of their inventories to a last-in-first-out basis rather than a first-in-first-out basis during the abnormal inflationary period of 1974–75.

The oil companies had a truly abnormal inventory value increase and had no alternative other than to reflect this increase in profits or change their method of costing inventory. If they had elected to sell off their low-cost inventories at lower prices until depletion, in order to avoid abnormal profits, stockholders would have had every right to properly become quite disturbed. The companies probably could have legitimately gone more quickly to a LIFO form of inventory costing and thereby not only have reduced their 1974 profits, but also the taxes that they paid. They delayed doing this and incurred the wrath of the U.S. citizenry who, in reality, benefited from the taxes the oil companies might have avoided.

These abnormal, one-time profits, however, do not demonstrate a lack of competition, the primary reason behind the legislation being considered by this subcommittee. In fact, had our normal economic systen not been at work, this pulsation of the increasd inventory value in the system might have gone unnoticed.

Bernard Baruch once said, wisely, that "If our general economic policies and national defense are sound, we need not worry about the stock market. On the other hand, if we fail to preserve national security and credit, then nothing any of us owns can have a lasting value."

I agree with Mr. Baruch, yet I am honestly concerned that relatively small numbers of our citizens and only a few of those who represent us in the Congress, truly accept Baruch's counsel. The single point I make here is that the national economy and national security do, and must, go hand in hand.

An assured source of petroleum in time of national emergency is of overriding importance to the Nation's security. Without petroleum, in large and adequate quantity, when and where needed, our Armed Forces would be immobilized and we could not protect our economy. The vast wealth and strength of our economic structure would quickly erode as transport of all types came to a halt. Millions of our homes are heated by oil-burning equipment and much of our electric power is generated in plants dependent on oil.

Those responsible for national security must also be ready to concern themselves with the well-being of our economy. Availability of petroleum supplies to support our economy, as well as that of our allies, is a prime example of such concern.

I find myself sometimes thinking that too often it is too much to expect elected officials to make tough, long-term economic/national security decisions when their personal, nearer term political interests may be adversely affected. Unfortunately, this can lead to political exploitation of a problem which could result in adverse long-term economic or national security implications.

Speaking as one who has, on occasions, spent time working the wrong problem, I believe that S. 2387 does not attack the real problem. The real problem is energy self-sufficiency—to the greatest practicable degree—and, again, this was emphasized in great detail in 1973, at the hearings that we referred to earlier. The Committee on Interior and Insular Affairs recognized this in 1973. Simply stated, we must have a national energy-generating capability that is not dependent upon unpredicatable foreign sources.

Most knowledgeable people will agree that this country can develop significant self-sufficiency. Without question, we know it will require a significant amount of invested capital. Not long ago I read that the Commerce Department estimates our country will require $4.5 trillion in new capital over the next decade. This represents an increase from $1.6 trillion between 1965 and 1974 and $760 billion between 1955 and 1965. A significant percentage of the $4.5 trillion will be needed to move us in the direction of energy self-sufficiency by 1985. Realistically speaking, it will take very large companies or consortiums of very large companies to acquire and properly apply the tremendous amounts of capital needed to approach energy self-sufficiency. Precipitous dismantling of our large, vertically integrated oil companies could have a very severe, adverse effect on both obtaining and applying this needed capital. Mr. Chairman, I would strongly urge that this subcommittee look into the entire capital subject before approving any oil company dismantling legislation.

While the intent of S. 2387 is to increase competition, I believe it misses its mark. It confuses size with lack of competition. No one would dispute that the major oil companies are large; however, I'm satisfied that, in spite of their various international cooperative agreements, they are competitive. If this is not so, and your judgment is that the drastic action contemplated by S. 2387 is warranted, then it

follows that dozens of other industries, where we find a much greater concentration than is the case with petroleum, should also be considered for fragmentation into smaller units. Some examples are big telephone companies, many utility companies and a myraid of others, from the chewing gum to the sewing machine industries. In fact, the same logic might apply to the few big unions.

It has been my own management philosophy to not change or modify an organization or function that is operating effectively. Generally speaking, it is better to make it more effective within the ongoing organization. The petroleum industry can undoubtedly improve, and some of its international cooperative agreements may need close scrutiny and even possible modification, but it is already operating relatively effectively. While the industry is heavily involved on the international front, its operations and ownership are heavily concentrated in the United States. These petroleum companies should be encouraged and assisted in every possible way to move the United States in the direction of energy self-sufficiency. Dismantling this industry would have the opposite effect. If the oil companies are not moving fast enough in the direction of self-sufficiency, as inferred in S. 489, then action should certainly be initiated to stimulate them to do so.

I stated earlier that I was concerned that the proposed legislation gave no consideration to national security. We could, without question, support the limited needs of the military services in wartime by petroleum rationing from present U.S. sources.

Since we have a very limited military capability today, we probably, even in a hostile environment, could not use more than the 1,090,000 barrels per day that was the peak consumption during the Vietnam engagement. This would be about 10 percent of our domestic supply capability. Our consumption levels could increase if we were forced into an environment involving a long period of military build-up.

Very few of us envision this possibility. Our allies, on the other hand, are much more vulnerable than we are—or most of our allies. Most of them lack the significant domestic production enjoyed by the United States. They are extremely dependent upon imported oil, mostly from the Middle East. I'm thinking particularly of Europe and Japan. I assume that it is not the intent of S. 2387 to turn our backs on our allies.

I, therefore, also assume we, as a country, believe that the security of our allies is interrelated with our own security. It follows, then, that all free world countries must work together to insure an adequate supply of petroleum in the event of a denial of Mid-East oil. The major, heavily U.S.-owned oil companies have been servicing our allies in an effective fashion, recognizing the severity of a denial threat from other sources. If these U.S.-owned companies are fragmented, however, our allies could be expected to work more closely and effectively with the few foreign, fully integrated companies, rather than the myriad of fragmented U.S. companies. International insecurity and loss of business by U.S.-owned companies would result.

We face 10 to 15 years of increasing dependence upon insecure energy sources. If we do not get our house in order, it could be longer than that. We face the possibility of both inadequate, as well as in-

secure energy supplies. Despite our best efforts, we probably face more energy insecurity over the near term. In 1974, Arab nations provided only about 13 percent of U.S. petroleum imports. In 1975, their share almost doubled to 25 percent. Studies by FEA and a congressional research group predict that by 1977 between 40 and 50 percent of U.S. petroleum imports of about 9 million barrels a day will come from Arab nations. Secretary Laird emphasized the seriousness of the problem in 1969, when he said:

We must look beyond 1980 when the larger oil-producing areas of the Western Hemisphere will most probably begin a period of decline. Security in that period will depend heavily on the degree to which alternate energy sources have been developed in the 1970's.

Mr. Chairman, I believe we must look at the worldwide petroleum availability situation in a very practical way. For years, exploration and control of so-called foreign oil was pretty much in the hands of major U.S. oil companies. These companies were not just handed this leadership role on a platter. They had plenty of competition from large petroleum companies in other free world countries. But they were dominant in large part because they controlled sufficient resources and know-how to capture a major part of the world market.

These major companies conducted negotiations that would otherwise have had to be handled by the U.S. Government. In essence, these companies served as a buffer for our political institutions. Most will agree that this preeminent position was in our national best interests.

But the old order changed. The reasons for the change are, I believe, pretty well understood. We saw oil-producing nations band together into OPEC. I think we should emphasize that the economic advantage, pre-OPEC, as a result of the major companies, went to consumer nations. I think we understand that. They exploited bigness and the influence of the major oil companies on the world scene diminished. But these same major oil companies, nevertheless, continue to play an important and vital role in the international petroleum marketplace.

They continue to be a valuable buffer for our political institutions. They continue to invest heavily in developing additional petroleum sources in areas outside of OPEC control.

I was fascinated, on the Today Show this morning, to learn that it is now going to cost $8 billion for the Alaska pipeline.

As I recall, in the early seventies, we were looking at $800 million to put in the Alaska pipeline; and to think the number today is $8 billion. This is not accomplished by a small company or small companies; it requires heavy investment.

And, Mr. Chairman, I believe that one of the principal reasons for the continued important role being played on the international front by these major oil companies is their size. Putting it another way, the financial and physical resources available to these companies are essential to success on the world scene.

If we break up these companies, as is contemplated by S. 2387, I just cannot comprehend how fragmenting the few into many more smaller companies—tiny, when compared to OPEC clout—could play a meaningful role in enhancing our national security interests and our economic interests. We would be further fragmenting our negotiating

capability, while OPEC concentrates theirs. This can only lead to higher and higher prices from the OPEC countries. Indeed, OPEC might cause some fragmentation but, indeed, we should not.

In essence, it seems almost ridiculous to reason that major U.S. oil companies will enjoy a better bargaining position on the international front with oil-producing nations if, instead of several U.S. companies, there were many—whatever the number of vertical fragmented companies. I cannot follow the logic and benefits to the United States of a situation where the major oil-producing countries are speaking with one voice, while we appear to be seriously considering further fragmenting our ability to deal with a large voice. Admittedly, foreign competitors of major U.S. oil companies will benefit, but both the U.S. consumer and our national security, worldwide, will be adversely affected.

Mr. Chairman, I understand that other countries are moving in the opposite direction from breaking up their large oil companies. In order to protect their national security interests, they are combining companies to obtain more clout. Japan, France, and Italy, to name just a few, are examples of this trend.

Because of these very practical reasons for "bigness" in today's petroleum environment, I believe that if we break up our major oil companies now, we will be forced by world events and the paramount necessity to protect our own national security to combine the pieces again in only a relatively few years to realize and capitalize on the benefits of bigness.

If I am correct, it is going to be almost impossible to "walk this cat back." Then would come the great temptation to accomplish this inevitable regrouping by nationalizing the entire industry. In my judgment, Mr. Chairman, that would be the wrong road to take; in fact, it might be disastrous.

It must be obvious to all of us by now, that there is no quick or inexpensive route to energy security. In my opinion, Mr. Chairman, S. 2387 would not enhance our energy security or national security. Since energy security and, hence, national security are fundamental to the well-being of our citizens, we should even be willing to accept less than full competition if this is necessary to accomplish our paramount objectives. On the other hand, if the petroleum companies are not willing, or for whatever reason are unable to move forward in the fields of energy, such as coal, oil shale, uranium, nuclear reactors, geothermal, solar, et cetera, we should take all steps necessary to insure the required commercialization of these energy forms. Admittedly, it may be too much to expect companies to make the investments required in the commercialization of shale, coal, and the like, in a totally free enterprise environment if oil is significantly cheaper than these other energy forms. We must find ways to exploit other energy sources, with or without the large oil companies. Over 5 years ago, Mr. Chairman, this point was emphasized to the Council of Economic Advisers and to the Congress.

Mr. Chairman, before closing, I would like to comment briefly on another bill, S. 489, which is also before the Senate. I am not necessarily opposed to S. 489, or horizontal divestiture as a general proposition, if we can be assured that it will move us more in the direction of energy self-sufficiency. In fact, if we were to assume that

the priorities are first, energy self-sufficiency and, second, low-cost energy, we should do everything possible to stimulate the petroleum and nonpetroleum energy companies, to move the U.S. in the direction of energy self-sufficiency. Admittedly, this is a complex area, requiring thorough and objective study, but if self-sufficiency can best be accomplished by horizontal divestiture or by preventing oil companies from further acquiring companies in other energy fields, then we should move in the direction. If a much greater concentration, or some form of competitive subsidized incentives, would assist in our accomplishing our self-sufficiency goal, we should consider them.

Mr. Chairman, it has been my purpose today to share with you my conviction that there is a very important and overriding national security interest in S. 2387.

I am not in any way suggesting that the past or present actions by the major oil companies have always been in the national interest. I am not suggesting that the actions of these companies are above challenge or reproach. Frankly, I don't think I should judge these issues. My prior experience, however, does suggest to me that it would not be prudent to proceed along the lines suggested by S. 2387, until such time as the committee has made an indepth study of the national security interests, some of which I have identified today.

Finally, Mr. Chairman, I believe it is terribly important that we not allow ourselves to be sidetracked from our true national security goals just because a few vertically integrated companies have done a poor job of informing the general public as to the competitiveness of their industry or as to their profits. Let us keep in mind that it is much easier to fragment the oil companies than it would be to reverse such action if this proposed legislation is wrong—and I believe it is wrong. And, above all, Mr. Chairman, it is vitally important to our national security and economic interests that this important subject not become a political issue.

Senator HRUSKA. Thank you, Mr. Shillito.

How long did you serve as Assistant Secretary of Defense, Installations and Logistics, Mr. Shillito?

Mr. SHILLITO. Four years, Mr. Chairman.

Senator HRUSKA. Could you give us those years?

Mr. SHILLITO. 1969 to 1973.

Senator HRUSKA. And there was formed at that time, I believe, in 1969 or thereabouts, the Cabinet Task Force on Petroleum Products and Resources.

Mr. SHILLITO. That is right.

Senator HRUSKA. When was it, exactly?

Mr. SHILLITO. That was formed in early 1969. National Security was recognized to be a matter of primary importance to our country. And that cabinet task force worked for almost a year, the major portion of a year. I might add, Mr. Chairman, a significant amount of time was put in by that cabinet task force, which was chaired by George Shultz, who was then Secretary of Labor, as you may recall.

Senator HRUSKA. After consideration of the statement of Mr. Shillito, we will come now to the next witness, whose appearance here is pretty much along the same line and the same basis for testimony, Neil H. Jacoby, the Graduate School of Management, at the University of California, Los Angeles.

Professor, we are happy to have you here. You have submitted a statement and filed it with the committee in timely fashion.
You may proceed to testify.

STATEMENT OF NEIL H. JACOBY, GRADUATE SCHOOL OF MANAGEMENT, UNIVERSITY OF CALIFORNIA, LOS ANGELES

Mr. JACOBY. Thank you, Mr. Chairman.
I shall not attempt to read all of the statement verbatim.
Senator HRUSKA. Skip-read it if you choose. It will be placed in the record, in its entirety; and you may skip-read as you wish, to emphasize the high points of your statement.
Mr. JACOBY. Thank you very much. And I will interpolate a few remarks.
I may say that my conclusions, although approached from a somewhat different direction than Mr. Shillito's, agree with him entirely, that the passage of S. 2387 would serve to enhance the power of the OPEC and prolong its effective life and, thereby, be contrary to the interests of the American people.
I wish to say at the outset that I am concerned, as I believe this committee is, only with the interests of the American consumer, the ordinary citizen who is buying petroleum products and whose interest it is to have an assured supply of products of increasing quality, at the lowest possible prices.
The oil companies only deserve our support if they provide this result for consumers—that is the test of any economic system.
If enacted, S. 2387—which I call here the Bayh bill—would require the vertical disintegration of all large American petroleum companies within 3 years. Such radical surgery on the corpus of the U.S. economy, whose petroleum industry produces around 7 percent of the GNP, would have incalculable consequences.
And I shall try to complement in what I say, rather than repeat previous testimony about the nature of the petroleum industry and the consequences of the enactment of this bill.
Let me first observe some anomalies in the premises underlying S. 2387.
In introducing the bill, Senator Bayh stated the theory that inspired the proposal; and he said, "The lack of competition in the oil industry is the result of the unique convergence "—I stress that phrase—" of two factors: intense concentration and vertical integration.
Senator Philip Hart, a cosponsor of the bill offered a somewhat different reason why it is needed.
He noted that vertical integration, per se, is neither good nor bad, and that each vertically integrated industry should be judged on its own merits.
But in the petroleum industry, he asserted, vertical integration is anticompetitive for two reasons: First, the industry is unlike all others in the degree of open coordination and cooperation between the participants in joint production, joint transportation, and joint bidding. Second, ownership and control of gathering lines, product lines and crude lines by the major oil companies effectively foreclose transportation to new entrants and make smaller companies stay in line.

Now, Mr. Chairman, neither of these statements satisfactorily explains why all-out vertical disintegration of large oil companies is needed to restore competition—assuming, for the sake of argument, that it is lacking—because both economic theory and antitrust policy clearly attach a greater probability of noncompetitive behavior to a high order of horizontal integration—that is, concentration of market shares—than to a high degree of vertical integration in the industry.

Indeed, we know that the ultimate degree of horizontal integration is monopoly, in the literal sense; whereas, the perfect vertical integration of a firm is quite consistent with effective competition, if there is an adequate number of such firms competing in the market.

So that if, indeed, it is a combination of these two conditions that creates the problem, as Senator Bayh asserts, then it would be more logical and effective to propose horizontal divestiture as a remedy.

Why has he opted for vertical dismemberment?

I will leave that question on the table.

If Senator Hart is correct in his theory that it is a combination of vertical integration with joint arrangements and pipeline control that creates a noncompetitive U.S. petroleum industry, the obvious solution would be to limit or preclude joint bidding and production and control of pipelines by large oil companies.

I believe that a thorough inquiry will show that such joint ventures do not interlock—as has been said— the participating oil companies in a common management; they are really a means of spreading the high risks of such investments, which benefits the public.

Even if it be assumed that such practices are objectionable, they could be cured by specific reforms. Complete vertical disintegration of the large companies would be unnecessary.

Yet, Senator Hart also proposed to "throw out the baby with the bath water," in supporting the Bayh bill. Now, these anomalies in the premises underlying the Bayh bill suggest that it was hastily drafted, without thorough analysis of all of the relevant facts regarding structure and behavior of the American petroleum industry.

I believe that the preponderant weight of the evidence shows, first, that the industry is comparatively unintegrated; second, that the industry is comparatively unconcentrated; third, that the industry is effectively competitive; and, fourth, that forced vertical integration would damage the public interest, by destroying efficiencies, increasing risks, raising petroleum product prices, retarding the movement toward energy independence and—this is paradoxical—probably leading to horizontal integration and a less competitive structure of the industry in the end.

Let me take up, if I may, these points in turn.

The first point is that the U.S. petroleum industry is relatively unintegrated, in a vertical sense. We know that vertical integration is a pervasive phenomenon in all advanced industrial economies.

And we can cite the steel companies, that integrate backward through ownership of coal mines and ore mines, or forward into fabrication of finished products; chemical companies, which integrate backward through ownership of phosphate, sulfur, potash and other deposits, and forward into specialized chemicals and pharmaceuticals —and I need not repeat or add to these examples.

The point is that there must be very weighty advantages to be derived from vertical integration, in order to make it so universal a phenomenon in both market and centrally planned economies and in both Government-owned and private-owned enterprises.

It is a reasonable inference that vertical integration of the U.S. petroleum industry, as in other industries, came about as a result of a quest for economies of production and limitations of risks—that is, from normel competitive motives.

The potential gains from vertical integration have been well formulated by Prof. Oliver Williamson and also, I may say, in testimony before this subcommittee, by Prof. Edward Mitchell, but because they are vitally important to an understanding of the consequences of disintegration, let me repeat them here again.

First, vertical integration gives stronger assurance of technical complementarity of successive industrial processes; thus, a refinery can be designed so as to maximize efficiency for a particular type of crude oil input.

Second, there is greater certainty of execution of business plans, because all stages of the production process are under the control of the firm; thus, a chain of retail service stations can be assured a supply of refined products, and consumer benefit from a more dependable flow of petroleum products and services of uniform high quality.

Third, there are economies of times, transport costs and investment in inventory, because the integrated firm can better coordinate successive operations. For example, a better coordination of crude oil production with tanker loading schedules can reduce waiting time and speed up transport.

Fourth, there are reductions in costs of bargaining and contracting, because transfers of products within the firm can be made more quickly and inexpensively than by negotiating with independent firms in markets.

Fifth, and finally, there are lesser costs of information needs for decisions, because the pertinent data are available within the firm and can quickly be communicated among its members, and need not be procured from external sources.

These gains from vertical integration are substantial, and they all add up to reduced costs of production, reduced risks, reduced costs of capital which are, of course, reflected in lower prices of petroleum products, in better products, and more ample services to consumers, given effective competition.

The point that I want to make here is that there are great advantages of vertical integration, but there are also a substantial number of very thriving unintegrated firms accounting for a substantial share of business, at every stage of the industry.

The unintegrated firm also has certain advantages, in conditions where knowledge of local and regional markets is important, and where managers specialize in single-stage operations versus multistage operations.

And the fact that unintegrated refiners and marketers, as a group, have expanded their market shares, at the expense of the integrated companies, during the past 20 years, vitiates the argument that the latter has generally squeezed the profit margins of the unintegrated firms.

We have, in other words, an industry in which there are viable firms of different kinds and where, at each stage, there are three kinds of competition—competition between integrated companies, between integrated and unintegrated companies, and among the unintegrated companies.

And I would point out that the Bayh bill would go far toward eliminating the first two of these three kinds of competition—which is a peculiar way, to say the least, of enhancing competition.

The important point is that the U.S. petroleum industry has relatively little vertical integration compared with the U.S. manufacturing industry in general. This was noted, in some detail, by Professor Mitchell in his testimony here; and I shall not repeat it.

But, as he pointed out, petroleum is among the least, and possibly the least vertically integrated among all 13 U.S. manufacturing groups.

Now, the implication of relatively low vertical integration in the petroleum industry is this: If vertical integration is an evil to be routed out of the economy, Congress should first require it in a dozen other manufacturing groups before attacking the oil industry.

And if it is, indeed, the unique convergence of intense concentration and vertical integration that makes the petroleum industry noncompetitive, as Senator Bayh has asserted, certainly, one cannot find the cause in its relatively low vertical integration.

So let us then turn to horizontal integration, that is, concentration. Here, we must note first the fact that the U.S. petroleum industry is also relatively unconcentrated in comparison with U.S. manufacturing industry as a whole. And that is true of whatever phase of the industry you measure.

The standard by which the degree of concentration in American manufacturing industries is normally measured is the share of the market accounted for by the top four firms, weighted by value added. And I have a table here, table 1,[1] that I reproduced from the Department of Commerce, showing four-firm concentration ratios.

Mr. JACOBY. Table 1 shows that the weighted average concentration ratio in American manufacturing in 1970 was 40.1 percent.

Table 2 [2] summarizes concentration in the U.S. petroleum industry during that same year, 1970. It shows the four-firm concentration was 27 percent in crude production, 35 percent in ownership of crude reserves, 34 percent in refining capacity and 30 percent in product marketing. These figures are all substantially under the weighted average for manufacturing industry as a whole.

And if we judge concentration in petroleum by reference to the standards suggested by Prof. J. S. Bain, which I have cited, it will also be seen that concentration in the industry should be rated "low" at the four-firm level and "moderately low" at the eight-firm level. The evidence, thus, emphatically contradicts Senator Bayh's characterization of concentration in the petroleum industry as "intense."

A final point on the structure of the industry is that no one firm towers over it, in the sense in which General Motors outshadows other motor vehicle manufacturers or IBM Corp. overshadows other suppliers of electronic data processing services and equipment.

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[1] See table 1, p. 2230.
[2] See table 2, p. 2231.

The largest firm, Exxon, comes in with about 8.5 percent of crude production, in 1970, and has comparable percentages of crude reserves and refining capacity. So that, judged by a purely structural task, the U.S. petroleum industry has been and is competitive.

The next question is whether it meets the task of competitive behavior. Here, we must note that economists usually apply a number of tests. Is it possible for new firms to enter the industry, and have they, in fact, done so?

Do prices of products sensitively reflect changes in costs and demands? Do the pressures of competition cause firms to make product improvements, to introduce new products and to amplify the services they offer? Does the rate of return on investment tend toward a normal level?

Well, a complete and up-to-date analysis of all of these behavioral parameters of the U.S. petroleum industry has not been made to my knowledge—and I think it ought to be. However, there is a good deal of evidence on the profitability of petroleum investment, some of which Mr. Shillito referred to, more of which was cited by Professors Mitchell, Erickson, and Mancke in their testimony here.

All of that evidence, Mr. Chairman, points clearly to the conclusion that returns to investment in the petroleum industry have not exceeded the average return to investment in American manufacturing industries, as a whole; and this conclusion holds, no matter how one measures it.

This, perhaps, is the most important single test of competitive behavior, because it indicates an absence of monopoly profit, that is, persistently supernormal returns on investments. And I think it fortifies the strong consensus among academic economists who have studied this industry, that competition, while not perfect, is indeed effective.

Indeed, I was just reading last evening a statement by Prof. Hendrik Houthakker, of Harvard, recently a member of the Council of Economic Advisers, and he says, "We have a petroleum industry that is more competitive than almost any other in the world."

This citation comes from "Dialogue on World Oil," a publication of the American Enterprise Institute of 1974. Many other citations of similar conclusions by academic economists could be made.

Now, let me come to the subject of competition in the foreign oil industry, which, in my opinion, supports the thesis of effective competition in the U.S. industry.

The foreign oil industry is analogous, I think, to the domestic industry, because the same leading firms participate in the industry, the technology of producing, transportingn, refining and marketing crude oil and its products is generally the same abroad as at home, and the business policies and practices of the oil companies abroad conform, generally, to those at home. Hence, it is a reasonable inference that the degree of competition that prevails abroad will prevail within the United States.

I have conducted an intensive study of the evolution of the structure and behavior of the foreign oil industry since World War II, with the objective of measuring the effectiveness of competition. The results were published at the end of 1974 by the Macmillan Co., in a book entitled "Multinational Oil, a Study in Industrial Dynamics."

And permit me to summarize, very briefly, some of the main conclusions.

Senator HRUSKA. Mr. Jacoby, who is the author of that book?

Mr. JACOBY. I am the author of that book, sir.

Senator HRUSKA. We have copies in our files, and refer to it every now and then.

Mr. JACOBY. I am very, very happy to hear that it proves useful.

Further on—let me say, first, that economic theory teaches that the identifying features of an effective cartel are these:

First, it is able to preclude new firms from entering the market; thus, preserving the market shares of its members; second, it restricts the supply of products; third, it maintains or raises the prices of products; fourth, it divides markets among its members; and, fifth, it realizes persistently high monopoly profits.

So, we ask, what does the evidence show with respect to each of these tests of effective cartelization in the foreign oil industry?

And, here, I will summarize.

The important point is that while the industry emerged from World War II in a highly concentrated condition, the explosive growth in petroleum demand and much easier conditions of entry—mainly by changes in the concession laws of foreign countries—led a horde of entrants into the industry after World War II, during the 50's and 60's, particularly. Between 1953 and 1972 at least 300 private and 50 Government firms entered.

In 1972, there were at least 50 vertically integrated oil companies in operation. The entrants carved out for themselves large segments of the market.

The massive deconcentration in the structure of the industry is shown in table 3,[1] in my prepared statement.

Because there is a special interest in the seven largest firms that dominated the industry at the end of World War II, it is interesting to look at changes in concentration over the period 1953 to 1973, in terms of the seven largest versus all other.

And such a comparison shows that the share of the seven largest in concession areas dropped from 64 to 24 percent; their share of crude reserves fell from 92 to 67 percent; their share of crude oil production declined from 87 percent to 71 percent; their role in refining capacity shrunk from 73 to 49 percent; their owned-tanker capacity dropped from 29 to 19 percent; their product marketing sales declined from 72 to 54 percent; and, of course, the market shares of the newcomers rose commensurately.

Now, manifestly, the foreign oil industry totally failed to pass the first test of an effective cartel—ability to preclude new entrants.

Second: Supply—this is the second test of an effective cartel, the ability to restrict the supply of the cartelized product.

What is the fact? The fact is, that crude oil production in the foreign non-Communist world rose from 3.1 million barrels per day in 1948 to 31 million barrels per day in 1972. That is an average compound growth of 10 percent a year maintained year after year.

One certainly cannot infer the existence of any effective mechanism for long-term output restriction from that record.

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[1] See table 3, p. 2233.

What about the price? After the reopening of the Suez Canal in 1957, following the Anglo-Egyptian war, burgeoning crude oil supplies and the advent of U.S. import quotas gave rise to a buyers' market.

Posted prices, f.o.b. ports of origin were cut in 1959 and 1960; and deepeninng discounts from posted prices made the delivered prices fall even more steeply during the 13 years from 1957 to 1970.

To cite a dramatic example, the average price of Saudi Arabian oil delivered into Japan fell from $3.42 a barrel in 1958 to $1.84 per barrel in 1970. And the record shows that actual transaction prices sensitively reflected changes in supply-demand relationships. There was no evidence of the high and rigid pricing associated with an effective cartel.

Of course, in 1970, OPEC began to exercise its growing power, and prices rose thereafter.

What about market shares? How successfully did the large international oil companies divide markets?

The facts show that substantial, nonsystematic shifts took place in the market shares of individual companies in crude oil production among these seven largest firms, both from year to year and over longer periods of time.

If we take the 20-year period, 1953 to 1972, Exxon's share of the world market, the foreign world market, fell from 24.9 to 13.7 percent; BP's petroleum share dropped from 20.6 to 14.9; Gulf's share fell from 11.2 to 8.1; Shell's share stayed nearly constant, while the shares of Texaco and SoCal rose. These changes were inconsistent with any overt or tacit market-sharing agreement.

So the commonsense of the matter, Mr. Chairman, is that they were the unplanned result of vigorous competition for markets.

And, finally, what about profits?

What happened with the burgeoning oil surplus after 1957 was that profits which had been high fell off rapidly, and fluctuated within a range of 11 to 14 percent on net worth per annum, consistenly up to 1972, which was about equal to the rates of earnings on U.S. investment in foreign manufacturing and other industries—and table 6 [1] in my prepared statement presents the data.

The foreign oil industry constitutes an almost classic case of competitive adjustment to changes in supply-demand relationships.

There was an absence of monopoly profits, because there was no monopoly power.

To sum it all up—during the 50's and 60's, the foreign oil industry gained an increasingly competitive structure, and its behavior constitutes a classic case of competitive adjustment to changing circumstances.

While competition was unlike the classical textbook model, it was indubitably effective. There was no monopolistic behavior to cause similar responses in the domestic industry.

And I belive that if effective competition prevailed abroad, it may safely be inferred that it was also effective in the less concentrated domestic industry.

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[1] See table 6, p. 2235.

Well, my main conclusion is that the proponents of the Bayh bill have not only failed to sustain the burden of proof which they carry, that the U.S. petroleum industry is not competitive, but they have failed to refute the substantial evidence that it is effectively competitive. Thus, their contention that vertical disintegration is needed to restore competition falls to the ground.

Now, let me come to my analysis of the consequences of vertical disintegration.

I believe I have shown that substantial benefits have been derived by consumers—by the oil companies, in the first instance, from vertical integration, in the form of reduced costs of production and lower risks and lower costs of capital. And, given the effective competition that prevailed in the industry, these benefits have been passed on to consumers of petroleum products at lower prices, improved products and more ample services.

These socially desirable effects are the proper objectives, I take it, of congressional policy.

If vertically integrated firms were forced to disintegrate, these benefits would vanish. Other things remaining the same, the prices of petroleum products would rise, product improvements would diminish and services would shrink. Consumers would suffer, and the social consequences would be adverse, as well. Here, I agree with Mr. Shillito's argument.

Second, forced vertical disintegration would severely damage the national interest in achieving a larger measure of independence from foreign countries, with respect to supplies of energy.

The breakup of large American oil companies would inevitably cripple the ability of a fractionated industry to finance high-risk exploration in the Outer Continental Shelves, in the Arctic, and in other remote and inhospitable regions where large reserves of crude oil, we hope, remain to be discovered. It would equally diminish the financial capacity of the industry to finance research and development aimed at producing synthetic fuels from shale, coal and tar sands, as well as from geothermal, solar, and other exotic sources.

Unless the Federal Government undertook these tasks, in a first step toward nationalization of the petroleum industry, vertical disintegration would deliver a lethal blow to the concept of energy independence. I believe that is a strong statement but not an overstatement.

A little noted but no less important potential consequence of vertical disintegration of the industry would be a significant rise in its horizontal integration—that is its concentration. This is a point that has been less noted, but I think is terribly important. The argument goes this way, that a primary motive for vertical integration has been the desire to limit risks. Refiners enter crude oil production to assure a supply of crude to reduce that risk, or they acquire service stations to assure marketing outlets for products.

Now, the effect of forced vertical disintegration would be to restore to the smaller single-stage surviving companies the higher level of risk that was reduced by vertical integration.

So what would these companies do?

Many of them would be unable to survive periods of business adversity. They would suffer bankruptcy or, more likely, would seek

mergers to become larger and stronger companies, better able to carry their risks.

What you do, therefore, by this kind of surgery, is simply to redistribute risks. The elimination of vertical integration creates pressures for horizontal integration, because that, too, is a device for reducing risks.

With foreclosure of vertical integration as a risk-limiting strategy, strong market forces would be created to produce larger and financially stronger firms.

After a decade or so, the oil industry might well end up with a higher level of concentration at each stage than it obtains today.

The ironic result of legislation intended to produce smaller firms in the petroleum industry might well be to enlarge their average size.

Now, finally, let me come to the last point—and here I present some confirmatory argument to Mr. Shillito's—and that is, what would be the effect of vertical disintegration on the power of the OPEC cartel?

Some have argued that vertical disintegration of the big oil companies would hasten the breakup of the cartel, by making it more difficult for the oil-producing countries to allocate supplies of crude oil among markets and countries.

The big oil companies, it is said, assist the OPEC in maintaining its monopoly power because they profit by it. I think Mr. Anthony Sampson testified here to that effect.

As I see it, Mr. Chairman, this argument is quite erroneous. It is simply untrue that the OPEC could not function without the cooperation of seven big oil companies. These companies do not decide the total amount of crude oil produced by the OPEC members, nor do they prorate the total allowable output among the producing countries. Those decisions are made by the OPEC; and, indeed, it is precisely OPEC's ability to restrict aggregate oil production and to prorate the total among its members that enables it to maintain its high price of crude oil.

The oil companies are helpless bystanders in those decisions. They merely buy oil from OPEC's members at OPEC's prices, and sell what the market will take, at a price which will, hopefull, cover their costs and yield a profit.

Multiplying the number of buyers of crude oil from such countries as Saudi Arabia, Kuwait or Iran, would actually make it easier for the OPEC to maintain a high price and a low output of crude oil, because OPEC would then be dealing with many economically weak buyers, instead of a small number of economically strong buyers—a point, I may say, Mr. Shillito has made. It would be able to play off the many small buyers against each other more readily than it can presently.

U.S. oil companies, after divestiture, would have even less bargaining power with the OPEC than the little they have today, because they would lack control over the transportation, refining and marketing facilities the OPEC needs to distribute its oil.

While world oil markets would probably operate less smoothly than today, because of poorer coordination of flows of crude oil and petroleum products, supplies would continue to be allocated among countries in accordance with changes in supply-demand relationships

in those countries. This allocation process can occur with many buyers of crude oil, as well as with few. OPEC does not need to maintain the present structure of the industry in order to maintain its monopoly power—that, I think, can be stated unequivocably.

Moreover, let me point out that OPEC monopoly power has been exercised against the oil companies as well as against consumers of petroleum products. The evidence is clear that their profits per barrel of OPEC crude oil during 1974 and 1975 have averaged less than they did before 1973.

And let me make this final point, that even if the public interest would be served by multiplying the number of buyers of Middle East oil—and I believe I have demonstrated that it would not be; but let us assume it, for the sake of argument—then horizontal, rather than vertical disintegration of the big oil companies would be the appropriate remedy.

The vertical disintegration proposed by the Bayh bill would leave a number of buyers of OPEC oil undisturbed, but it would, as noted previously, weaken the bargaining position of those buyers with the OPEC members, by depriving them of their downstream facilities. For example, the four stockholders of Aramco, which are Exxon, Mobil, SoCal, and Texaco, would be forced to divest their transportation, refining and marketing assets if they elected to remain in the business of producing and selling crude oil.

From OPEC's point of view, they would be less reliable off-takers of oil than the integrated oil companies of foreign nations—such as British Petroleum, CFP of France, ENI of Italy, DMEX of West Germany—companies with which the U.S.-integrated firms compete.

The only effective way for the United States to weaken the OPEC cartel is, first, to conserve energy; second, to develop alternative energy sources of comparable magnitude; and, third, to take leadership in forming a coalition of the important oil-importing nations which can join with the OPEC nations in writing a world petroleum agreement.

Passage of the Bayh bill would weaken the bargaining position of U.S. oil companies and would hurt U.S. consumers. It would thereby operate to extend the effective life of the OPEC cartel, and delay the day when normal economic forces destroy its power.

Then, let me conclude, Mr. Chairman. The case, I think, against enactment of the Bayh bill is really overwhelming. The thesis on which it is based is false.

The U.S. petroleum industry is relatively unconcentrated, both vertically and horizontally. Available evidence shows that its behavior is as effectively competitive as is its structure.

And this conclusion is buttressed by the competitive behavior of the foreign oil industry, which contains much the same companies.

Vertical disintegration would damage consumers of petroleum products; it would impair the national security interest in lessened dependence on foreign sources of supplies.

It probably would lead to bankruptcies or mergers, to achieve financially stronger firms, better able to survive the inherent risks of the oil industry, risks that would be increased as a consequence of the Bayh bill.

And, finally, it would serve to strengthen the OPEC cartel and prolong its effectiveness.

Thank you.

[The prepared statement of Mr. Jacoby follows. Testimony resumes on p. 2238.]

PREPARED STATEMENT OF NEIL H. JACOBY, GRADUATE SCHOOL OF MANAGEMENT, UNIVERSITY OF CALIFORNIA, LOS ANGELES

VERTICAL DISINTEGRATION OF THE U.S. PETROLEUM INDUSTRY: THE ECONOMIC ISSUES

1. Introduction

Mr. Chairman and Members of the subcommittee, my name is Neil H. Jacoby, and I am Professor of Business Economics and Policy in the Graduate School of Management of the University of California, Los Angeles. For many years I have studied the petroleum industry in the United States and abroad as a university scholar and also as a director of a multinational oil company. From these practical as well as theoretical perspectives I welcome this opportunity to discuss with you basic economic issues raised by S. 2387, introduced by Senator Birch Bayh.

If enacted, the Bayh Bill would require the vertical disintegration of all large American petroleum companies within three years. Such radical surgery on the corpus of the U.S. economy, whose petroleum industry produces around 7 percent of the GNP, would have incalculable consequences. In an endeavor to contribute to an understanding of the structure and behavior of the petroleum industry, of the role played by vertical integration, and of the probable consequences of forced vertical disintegration, I shall present economic data and analysis that complement rather than repeat previous testimony to this Subcommittee. I shall not enter into the enormous financial, legal, international and other problems created by a vertical dismemberment of the large oil companies, because they have been pointed out by previous witnesses.

May I state my major conclusions at the outset: Forced vertical disintegration of large U.S. oil companies would lead to higher-priced petroleum products, would increase dependence upon foreign energy, would strengthen and prolong the effectiveness of the OPEC cartel, and, paradoxically, would probably make for a *less* competitive structure of the industry. It is therefore contrary to the public interest, and should be defeated.

2. Anomalies in the Theory Underlying the Bayh Bill

Let us first observe some anomalies in the premises underlying S. 2387. In introducing the Bill Senator Bayh stated the theory that inspired this proposal for vertical disintegration of oil companies. He said: "The lack of competition in the oil industry is the result of the *unique convergence* (italics added) of two factors: intense concentration and vertical integration. Neither of these economic phenomena is automatically anti-competitive; however, in concert they provide a small number of companies with extensive control over an essential commodity." [1]

Senator Phillip A. Hart, a co-sponsor of the Bill, offered a different reason why it is needed. He correctly noted that vertical integration *per se* is neither good nor bad, and that each vertically integrated industry should be judged on its own merits. But in the petroleum industry, he asserted, vertical integration is anticompetitive for two reasons: First, the industry is "unlike all others in the degree of open cooperation—and cooperation between the participants in joint production, joint transportation and joint bidding." Secondly, ownership and control of gathering lines, product lines and crude lines by the major oil companies effectively foreclose trransportation to new entrants and make smaller companies "stay in line." [2]

Neither of these statements satisfactorily explains why *all-out vertical disintegration* of large oil companies is needed to restore competition, assuming for the sake of argument that it is lacking. Economic theory clearly attaches a greater probability of noncompetitive behavior to a high order of *horizontal* integration (i.e., concentration of market shares) than to a high degree of vertical

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[1] *Congressional Record,* Senate, September 22, 1975.

[2] *Ibid.*

integration in an industry. Indeed, the ultimate degree of horizontal integration is monopoly in the literal sense; whereas the perfect vertical integration of a firm is quite consistent with effective competition, if there is an adequate number of such firms competing in the market. If, indeed, it is a *combination* of these two conditions that creates the problem, as Senator Bayh asserts, then it would be more logical and effective to propose *horizontal* divestiture as a remedy. Why has he opted for vertical dismemberment?

If Senator Hart is correct in his theory that it is a combination of vertical integration with joint arrangements and pipeline control that creates a noncompetitive U.S. petroleum industry, the obvious solution would be to limit or preclude joint bidding and production and control of pipelines by large oil companies. I believe that a thorough inquiry will show that such joint ventures do *not* "interlock" the participating oil companies in a common management. They are really a means of spreading the high risks of such investments, which benefits the public. Even if it be assumed that such practices are objectionable, they could be cured by specific reforms. Complete vertical disintegration of the large companies would be unnecessary. Yet, Senator Hart also proposes to "throw out the baby with the bathwater" in supporting the Bayh Bill.

These anomalies in the premises underlying the Bayh Bill suggest that it was hastily drafted without thorough analysis of all of the relevant facts regarding the structure and behavior of the American petroleum industry.

The preponderant weight of the evidence shows:

First: That the industry is *comparatively unintegrated.*

Second: That the industry is *comparatively unconcentrated.*

Third: That the industry is *effectively competitive.*

Fourth: That *forced vertical disintegration would damage the public interest* by destroying efficiencies, increasing risks, raising petroleum product prices, retarding the movement toward energy independence, and probably leading to horizontal integration and a less competitive structure of the industry.

3. The U.S. Petroleum Industry Is Relatively Unintegrated Vertically

Vertical integration is a pervasive phenomenon in all advanced industrial economies. Many steel companies integrate backward through ownership of coal mines and ore mines, or forward into fabrication of finished products. Most chemical companies integrate backward through ownership of phosphate, sulfur, potash and other deposits, and forward into specialized products and pharmaceuticals. Motor vehicle manufacturers may own steel and glass-making plants, manufacture their own parts, and even sell and service their vehicles. Food manufacturers often own farms, process and pack food products, and retail them. Even farmers integrate vertically, as in the case of the hog farmer who grows his own feed, or the grower who markets fruits and vegetables through a roadside stand.

Manifestly, there must be weighty advantages to be derived from vertical integration in order to make it so universal a phenomenon in both market and centrally planned economies and in both government-owned and privately-owned enterprises. It is a reasonable inference that vertical integration in the U.S. petroleum industry—as in other industries—came about as a result of a quest for economies of production and limitation of risks, that is, from normal competitive motives.

The potential gains from vertical integration have been well formulated by Professor Oliver Williamson, and also by Professor Edward J. Mitchell in testimony to this Subcommittee.[3] They include the following:

First: There is stronger assurance of technical conplementarity of successive industrial processes. Thus, a refinery can be designed so as to maximize efficiency for a particular type of crude oil input.

Second: There is greater certainty of execution of business plans, because all stages of the production process are under the control of the firm. Thus, a chain of retail service stations can be assured a source of supply of refined products, and consumers benefit from a more dependable flow of petroleum products and services of uniform, high quality.

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[3] See Oliver Williamson, *Corporate Control and Business Behavior* (New York: Prentice Hall, 1970), Chapt. 2. See also *Congressional Record*, Senate, January 22, 1976. In theory, vertical integration will occur whenever the costs to the firm of transacting in markets (including premiums for bearing risk) exceed the costs of vertical unification.

Third: There are economies of time, transport costs, and investment in inventory because the integrated firm can better coordinate successive operations. For example, a better coordination of crude oil production with tanker loading schedules can reduce time and speed up transportation.

Fourth: There are reductions in costs of bargaining and contracting, because transfers of products within the firm can be made more quickly and inexpensively than by negotiating with independent firms in markets.

Fifth and finally: There are lesser costs of information needed for decisions, because the pertinent data are available within the firm and can quickly be communicated among its members, and need not be procured from external sources. The fact that crude oil and its major products are fluids which are relatively costly to store above ground has made continuity of control from well to pump a causal factor of special importance in the vertical integration of the petroleum industry.

The gains from vertical integration are substantial. In their penetrating and massive study of *Integration and Competition in the Petroleum Industry* (Yale University Press, 1959), Professors Melvin de Chazeau and Alfred E. Kahn came to the conclusion that vertical integration had fostered the growth of the industry by reducing risks and costs of capital, providing coordinated use of specialized talents, and permitting a better synchronization of the flow of crude oil and products. "They are advantages not lightly to be dismissed in the unforeseeable contingencies of the future," they concluded.[4]

The advantages of vertical integration—reduced costs of production, reduced risks, and reduced costs of capital are, of course, reflected in lower prices, improved products and more ample services to consumers of petroleum products, given effective competition.

Despite strong technical and economic reasons for vertical integration, *no petroleum enterprise is perfectly integrated.* All either buy or sell products or services in carrying on their operations from exploation to marketing. Even the largest firms contract for seismological, drilling and other services. Even the largest do not attain, except by accident, a perfect balance between their crude production, transport facilities, refinery runs and product sales. All participate in the intermediate petroleum markets, as buyers, as sellers, or as both.

There is also a substantial number of thriving unintegrated firms accounting for a substantial share of the business at every stage of the industry.[5] For obvious reasons, unintegrated firms normally operate at a higher level of risks than do the integrated companies. Being at the mercy of fluctuating market conditions for both their inputs (raw materials) and outputs (sales), their annual profits fluctuate more widely and are less predictable. However, there is evidence that unintegrated firms are compensated for these higher risks by a somewhat higher rate of return on investment. At each stage of the industry there is competition among integrated companies, between integrated and unintegrated firms, and among unintegrated firms. The Bayh Bill would go far to eliminate two of these three types of competition.

The U.S. petroleum industry is pluralistic in structure. It contains thousands of individual enterprises of a wide range of sizes, degrees of integration, areas of operation, and business strategies and policies. It is neither monolithic nor oligopolistic at any stage.

Of primary importance is the fact that the *U.S. petroleum industry has relatively little vertical integration* compared with U.S. manufacturing industries in general. As Professor Edward T. Mitchell has noted in his testimony to this Subcommittee, citing studies of Adelman and Gort, petroleum is among the least—and possibly the least—vertically integrated among all thirteen U.S. manufacturing groups.[6] Although several different measures of vertical integation may be applied, this conclusion holds for all measures.

The implication of relatively low vertical integration in the petroleum in-

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[4] *Op. cit.*, p. 566.

[5] The fact that *un*integrated refiners and marketers, as a group, expanded their market shares at the expense of the integrated companies during the past twenty years vitiates the argument that the latter generally "squeezed" the profit margins of the unintegrated firms.

[6] Testimony of Edward T. Mitchell, *Congressional Record*, Senate, January 22, 1976. See M. Adelman, "Concept and Statistical Measurement of Vertical Integration," *Business Concentration and Public Policy* (Princeton: National Bureau of Economic Research, 1955). See also M. Gort, *Diversification and Integration in American Industry* (Princeton: National Bureau of Economic Research, 1962).

dustry is that, if vertical integration really is an evil to be routed out of the U.S. economy, Congress should first require vertical divestment in a dozen other manufacturing groups before attacking he oil industry! If, indeed, it is the "unique convergence" of "intense" concentration and vertical integration that makes the petroleum industry non-competitive, as Senator Bayh has asserted, certainly one cannot find the case in its relatively low *vertical* integration. One is therefore obliged to turn to the degree of *horizontal* integration, that is, of concentration in the industry.

4. The U.S. Petroleum Industry Is Relatively Unconcentrated

It is a fact that *the U.S. petroleum industry is also relatively unconcentrated* in comparison with U.S. manufacturing industry as a whole. This is true irrespective of whether concentration is measured with respect to crude oil production, ownership of crude oil reserves, ownership of refining capacity, or product marketing. The conventional wisdom that the industry is dominated by a few giants is refuted by the facts, most of which were analyzed in two recent studies by the staff of the Federal Trade Commission.[7]

TABLE 1.—DISTRIBUTION OF BUREAU OF THE CENSUS FOUR-FIRM CONCENTRATION RATIOS FOR MANUFACTURING INDUSTRIES, 1970

4-firm concentration ratio	Share of value added	4-firm concentration ratio	Share of value added
0 to 9	4.94	60 to 69	5.68
10 to 19	14.71	70 to 79	7.06
20 to 29	21.58	80 to 89	1.67
30 to 39	14.64	90 to 100	5.78
40 to 49	14.46		
50 to 59	9.48	Weighted average concentration ratio	40.1

Source: U.S. Department of Commerce, Bureau of Census, "Annual Survey of Manufactures, 1970, Value of Shipment" Concentration Ratios, M70 (AS)–9 (Washington: U.S. Government Printing Office, 1972).

The standard by which the degree of concentration in American manufacturing industries is normally measured is the share of the market accounted for by the top four firms, weighted by value added. Table 1 shows the distribution of value added by American manufacturing industries in 1970 by successive classes of four-firm concentration ratios. The weighted average concentration ratio was 40.1 percent.

Table 2 summarizes concentration in the U.S. petroleum industry during the same year 1970. It shows that four-firm concentration was 27.1 percent in crude production, 35.5 percent in ownership of crude reserves, 34.0 percent in refining capacity, and 30.0 percent in product marketing. These figures are all substantially *under* the weighted average for manufacturing industries as a whole.

Concentration in the U.S. petroleum industry may also be judged by reference to the following standards for manufacturing industries suggested by Professor J. S. Bain, a respected specialist in industrial organization:[8]

4-firm percent of market	8-firm percent of market	Degree of concentration
75 percent or more	90 percent or more	Very high.
65 to 75 percent	85 to 90 percent	High.
50 to 65 percent	70 to 85 percent	Moderately high.
35 to 50 percent	45 to 70 percent	Moderately low.
Under 35 percent	Under 45 percent	Low.

[7] See *Concentration Levels and Trends in the Energy Sector of the U.S. Economy* by Joseph P. Mulholland and Douglas V. Webbink. Staff Report to the Federal Trade Commission, Washington, D.C. (March 1974), p. 244. See also Preliminary Federal Trade Commission Staff Report on its *Investigation of the Petroleum Industry,* Washington, D.C. (1973).

[8] J. S. Bain, *Industrial Organization* (New York: John Wiley and Sons, 1959), pp. 124–33.

TABLE 2.—CONCENTRATION IN THE U.S. PETROLEUM INDUSTRY

Dimension	Percent of U.S. industry output accounted for by— Top firm	Top 4 firms	Top 8 firms	Total number of firms (estimated)
Crude oil production (1970)	8.5	27.1	49.1	9,000 to 10,000.
Crude oil reserves (1970)	11.6	35.5	58.5	9,000 to 10,000.
Refining capacity—gasoline (1970)	9.2	34.0	59.8	131.
Product sales (gasoline) (1973)	8.0	30.0	52.4	15,000 wholesalers; 200,000 retailers.

Sources: Crude Oil production and reserves from "Concentration Levels and Trends in the Energy Sector of the U.S. Economy" by Joseph P. Mulholland and Douglas W. Webbink, Staff Report to the Federal Trade Commission, Washington D.C., March 1974, pp. 63 65. Gasoline Refining Capacity from U.S. Federal Trade Commission, "Preliminary Federal Trade Commission Staff Report on Its Investigation of the Petroleum Industry" (Washington, 1973). Table II-3. Gasoline Sales from Harold Wilson, "Exxon and Shell Score Gasoline Gains," Oil and Gas Journal, June 3, 1974.

By these standards, concentration in the U.S. petroleum industry should be rated "low" at the four-firm level and "moderately low" at the eight-firm level. The evidence thus emphatically contradicts Senator Bayh's characterization of concentration of the U.S. petroleum industry as "intense."

Moreover, the data show that no one firm towers over the industry in the sense in which General Motors outshadows other motor vehicle manufacturers or International Business Machines Corporation overshadows other suppliers of electronic data processing services and equipment. The largest firm, Exxon, accounted for only 8.5 percent of U.S. crude oil production in 1970, owned 11.6 percent of domestic crude oil reserves, and owned 9.2 percent of refining capacity. It was not even the largest vendor of motor fuel, the Number 1 position being occupied by Texaco with 8.0 percent of the national market. Being a huge industry, petroleum involves numerous giant firms as well as a host of medium and small enterprises at all levels of operation. Although concentration of domestic crude oil production and ownership of reserves has risen moderately over the past twenty years, it is still significantly lower than in the foreign oil industry, which, as will be shown, is effectively competitive. Judged by purely *structural* tests, the U.S. petroleum industry has been and is competitive. The next question is whether it has met the tests of competitive *behavior*.

5. Available Evidence Indicates Competitive Behavior by the U.S. Petroleum Industry

In determining whether the behavior of an industry is effectively competitive, economists usually apply a number of tests: Is it possible for new firms to enter the industry and have they, in fact, done so? Do prices of products sensitively reflect changes in costs and in demand? Do the pressures of competition cause firms to make product improvements, to introduce new products, and to amplify the services they offer consumers? Does the rate of return on investment tend toward a normal level?

A complete and up-to-date analysis of all of the behavioral parameters of the U.S. petroleum industry has not been made to my knowledge. However, there is a good deal of evidence on the profitability of petroleum investment in the United States, much of which as been cited by Professors Mitchell, Erickson and Mancke in testimony to this Subcommittee. All of that evidence points to the conclusion that returns to investment in the petroleum industry have not exceeded the average return to investment in American manufacturing industries as a whole. As Professor Erickson noted, the average rate of return on equity investment in the 125 companies in *Moody's Industrials* during the period 1951–1971 was 12.6 percent per annum. For the eight largest petroleum companies it was 11.9 percent.[9]

Because standard accounting measures of profit can depart in a number of ways from the economic definition, Professor Edward J. Mitchell measured the profitability of oil investment in a different way. In effect, he calculated the annual rate of return to the investor represented by the aggregate gain in the market value of common stocks over considerable periods of time. His conclusion was the investments in stocks of American petroleum companies were

[9] *Congressional Record,* Senate, January 29, 1976. Testimony of Professor Edward W. Erickson.

significantly *less* profitable than investments in the 500 stocks in the *Standard and Poor's Index* over the period 1953 to 1972. He also found that stock investments in the eight largest U.S. oil companies charged by the FTC with monopolizing the industry earned an average return of 12.1 percent a year, more than 20 percent *less* than the yield of investments in stocks in the Standard and Poor's Index.[10] One must look hard, indeed, to discover monopoly profits in this record.[11]

6. Effective Competition in the Foreign Oil Industry Supports the Thesis of Effective Competition in the U.S. Industry

In determining whether there is effective competition in the U.S. petroleum industry, it is pertinent to examine the structure and behavior of the foreign oil industry in the non-Communist world outside of North America. The analogy of the foreign to the domestic petroleum industry is close because the leading firms in the U.S. industry are the same multinational companies that predominate in the non-Communist world of oil. Of the 29 large private oil companies of the world included in the annual *Financial Analysis* published by the Chase Manhattan Bank, all but four are based in the United States, and two of those (British Petroleum and Royal Dutch Shell) have important U.S. investments.[12] The total assets of these 29 companies at the end of 1974 amounted to $132.8 billion, of which $68.5 billion or 51.6 percent was invested in the United States and $64.3 billion or 48.4 percent was invested in other countries. The technology of producing, transporting, refining and marketing crude oil and its products is generally the same abroad as it is in the United States. The business policies and practices of oil companies abroad generally conform to those at home. Hence, it is a reasonable inference that that degree of competition which prevails in the foreign oil industry will prevail within the United States.

I have conducted an intensive study of the evolution of the structure and behavior of the foreign oil industry since World War II, with the objective of measuring the effectiveness of competition. The results were published at the end of 1974 by The Macmillan Company in *Multinational Oil: A Study in Industrial Dynamics*, and I shall try to summarize them here.

Ever since the publication in 1952 of a Federal Trade Commission Staff Study entitled *The International Petroleum Cartel*, which was followed in 1953 by the filing of a lawsuit by the Department of Justice against seven large U.S. and foreign oil companies—the so-called "seven sisters"—there has been a widespread belief that the foreign oil industry has been in the hands of a corporate cartel.[13] Less widely known is the fact that this lawsuit was subsequently ended by consent decrees entered into with three of the five U.S. companies and that it was subsequently dismissed as against the remaining two companies for lack of evidence. Hence, it is illuminating to ask whether or not the structure and behavior of the international oil industry, as it evolved after World War II, met the conditions of a cartel.

Economic theory teaches that the identifying features of an effective cartel are these:

First: It is able to preclude new firms from entering the market, thus preserving the market shares of its members.

Second: It restricts the supply of products.

Third: It maintains or raises prices of products.

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[10] See *Congressional Record*, Senate, Testimony of Professor Mitchell, January 22, 1975. Also Edward J. Mitchell, *U.S. Energy Policy:* A Primer (Washington: American Enterprise Institute, 1974), Table B-1.

[11] The following studies conclude that the behavior of the industry has been consistent with effective competition: Edward A. Erickson and Robert W. Spann, "The U.S. Petroleum Industry," *The Energy Question: An International Failure of Policy*, eds., Edward W. Erickson and L. Waverman (Toronto: University of Toronto Press, 1974); Thomas D. Duchesneau, *Competition in the U.S. Energy Industry*. A Report to the Energy Policy Project of the Ford Foundation (Cambridge: Ballinger Publishing Co., 1975); Edward A Mitchell, *U.S Energy Policy: A Primer* (Washington, D.C.: American Enterprise Institute, 1974).

[12] The other two foreign-based companies included in the survey are Compagnie Francaise de Petroles of France and Petrofina Societe Anonyme of Belgium. This survey excludes numerous smaller U.S.-based and foreign-based companies and all government-owned campanies. See Chase Manhattan Bank, *Financial Analysis of a Group of Petroleum Companies* 1974, pp. 2, 31.

[13] *The International Petroleum Cartel*, Staff Report to the Federal Trade Commission. Submitted to the Subcommittee on Monopoly of the Select Committee on Small Business, U.S. Senate, August 22, 1952.

Fourth: It divides markets among its members.

Fifth: It realizes persistently high monopoly profits. What does the evidence show with respect to each of these tests of effective cartelization?

Entrants

Technical and political conditions caused the foreign oil industry to emerge from World War II in a highly concentrated condition. In 1948 a handful of very large firms together owned most of the crude oil reserves, and refined and distributed most of the petroleum products. But the explosive growth in petroleum demand and easier conditions of entry led a horde of entrants into the industry. Between 1953 and 1972 at least 300 private and 50 government firms entered. In 1972 there were at least 50 vertically integrated international oil companies in operation.[14] The entrants carved out for themselves large segments of the market. The massive deconcentration in the structure of the industry is shown in Table 3. Judged by Professor Bain's standards, concentration in all four divisions of the industry was either "high" or "very high" in 1953. Twenty years later, by 1972, concentration had fallen to a "moderately low" level. (However, a comparison of Tables 2 and 3 shows that the foreign industry remained *more* concentrated than the domestic industry.)

TABLE 3.—CONCENTRATION OF THE FOREIGN OIL INDUSTRY, 1953 AND 1972

[Percentages of the total market]

Division of the industry	1953			1972		
	Top firm	Top 4 firms	Top 8 firms	Top firm	Top 4 firms	Top 8 firms
Proven crude oil reserves	35.7	73.5	95.8	14.3	46.7	74.6
Crude oil production	24.9	69.0	91.0	14.9	49.2	75.1
Refining capacity	22.3	63.5	78.5	13.1	38.3	50.8
Sales of petroleum products	26.2	61.5	75.0	14.0	42.9	59.4

Source: Neil H. Jacoby, "Multinational Oil" (New York: The Macmillan Co., 1974) pp. 187, 193, 199, and 207.

TABLE 4.—MARKET SHARES OF THE "SEVEN LARGEST" FIRMS COMBINED AND OF "ALL OTHER" FIRMS COMBINED IN THE FOREIGN OIL INDUSTRY, 1953 AND 1972

[Percent of total]

Division of the industry	1953		1972	
	"Seven Largest" firms	"All Other" firms	"Seven Largest" firms	"All Other" firms
Concession areas held	64	36	24	76
Proven crude oil reserves	92	8	67	33
Crude oil production	87	13	71	29
Refining capacity	73	27	49	51
Tanker capacity owned	29	71	19	81
Product sales	72	28	54	46

Source: Neil H. Jacoby, "Multinational Oil" (New York: Macmillan, 1974) p. 211.

Because of the special interest in the "seven largest" firms that dominated the industry at the end of World War II, changes in concentration over the period 1953–1972 are measured in terms of the "seven largest" versus "all other" firms in Table 4. It shows that the share of the "seven largest" in concession areas dropped from 64 percent to 24 percent; their share of crude reserves fell from 92 percent to 67 percent; their share of crude oil production declined from 87 percent to 71 percent; their role in refining capacity shrank from 7.3 percent to 49 percent; their owned tanker capacity dropped from 29 percent to 19 per cent; and their product marketing sales declined from 72 percent to 54 percent. Market shares of the newcomers rose commensurately.

Manifestly, the foreign oil industry totally failed to pass the first test of an effective cartel—ability to preclude new entrants.

[14] Neil H. Jacoby, *Multinational Oil* (New York: The Macmillan Company, 1974), p. 120.

Supply

A second test of an effective cartel is ability to restrict the supply of the cartelized product. The fact is that crude oil production in the foreign non-Communist world rose from 3.1 million barrels per day in 1948 to 31 million barrels per day in 1972. This tenfold increase over a period of 24 years represented an average compound growth of 10 percent per year.[15] (If one adds the approximately 1 million barrels per day exported by the Communist Bloc to the West, the growth rate rises to 11 percent per annum.) One cannot infer the existence of any effective mechanism for long-term output restriction from this record.

Price

Prices of crude oil and its products generally rose during the post-war era up to 1957, as a consequence of powerfully expanding demand combined with the special Korean War requirements of 1950–53, the cessation of Iranian output during the Mossadecq period of 1951–54 and the closure of the Suez Canal in 1955–1957 during the Franco–British war with Egypt. After the reopening of the Suez Canal in 1957, burgeoning crude oil supplies and the advent of U.S. import quotas gave rise to a buyer's market. *Posted* prices f.o.b. ports of origin were cut in 1959 and 1960, and deepening discounts from these posted prices made *delivered* prices fall even more steeply during the thirteen years from 1957 to 1970. To cite a dramatic example, the average price of Saudi Arabian Oil delivered into Japan fell from $3.42 per barrel in 1958 to $1.84 in 1970.[16] The record shows that actual transaction prices sensitively reflected changes in supply-demand relationships. There was no evidence of the high and rigid pricing associated with an effective cartel. Beginning in 1970, OPEC began to exercise its growing power and prices rose thereafter.

Market shares

How successfully did the large international oil companies divide markets and stabilize their market shares? The facts show that substantial, non-systematic shifts took place in the market shares of individual companies in crude oil production among the "seven largest," both from year to year and over longer periods of time. As shown in Table 5, there were radical changes in the relative market shares over the 10-year period 1953 to 1972. Exxon's share fell from 24.9 percent to 13.7 percent of the foreign world market; BP's share dropped from 20.6 percent to 14.9 percent. Gulf's share diminished from 11.2 percent to 8.1 percent. Shell's share nearly stayed constant, while the shares of Texaco and SoCal rose. These changes were inconsistent with any overt or tacit market-sharing agreement among them.[17]

The common sense of the matter, Mr. Chairman, is that they were the unplanned result of a vigorous competition for markets, old and new.

TABLE 5.—SHARES OF CRUDE OIL PRODUCTION BY THE "SEVEN LARGEST" COMPANIES IN THE FOREIGN OIL INDUSTRY, 1953 AND 1972

[Percent of the industry]

Company	1953	1972
Exxon	24.9	13.7
British Petroleum	20.6	14.9
Shell	12.3	11.3
Gulf	11.2	8.1
Texaco	6.7	9.3
Socal	6.1	8.6
Mobil	5.3	5.0
Total "Seven Largest"	87.1	70.9
Total "All Others"	12.9	29.1
Total industry	100.0	100.0

Source: Jacoby, "Multinational Oil," p. 177.

[15] *Op. cit.*, pp. 71–2.
[16] *Op. cit.*, p. 228.
[17] *Op. cit.*, pp. 204, 210 and Figure 9.2 on p. 176.

Profits

Finally, have firms in the foreign oil industry persistently earned above-normal incomes, as would be expected if they constituted an effective cartel? as is shown in Table 6, rates of earnings on U.S. direct investment in the foreign petroleum industry were abnormally high (25–30 percent per annum) in the early post-World War II period up to about 1957. Thereafter, with declining prices, profits fell off rapidly and fluctuated within a range of 11 to 14 percent on net worth per annum consistently up to 1972, which was about equal to rates of earnings on U.S. investment in foreign manufacturing and other industries.[18] The foreign oil industry thus constitutes an almost classic case of competitive adjustment to changes in supply/demand relationships. There was an absence of monopoly profits because there was no monopoly power.

To Sum Up: During the 1950s and the 1960s, the foreign oil industry gained an increasingly competitive structure, and its behavior constitutes a classic case of competitive adjustment to changing circumstances. While competition was unlike the Classical textbook model, it was indubitably effectve. There was no monopolistic behavior to cause similar responses in the domestic industry. If effective competition prevailed in the foreign oil industry, it may safely be inferred that it was also effective within the much less concentrated domestic industry.

TABLE 6.—RATES OF EARNINGS ON U.S. DIRECT INVESTMENT IN FOREIGN INDUSTRIES, ANNUALLY 1955–72

[Percentage of net income to net assets]

Year	Petroleum	Mining and smelting	Manufacturing	Other industries
1955	30.2	13.1	13.0	10.2
1956	28.8	14.6	12.1	9.7
1957	23.8	10.7	10.8	10.0
1958	16.2	7.7	10.3	9.2
1959	13.8	11.0	11.6	9.3
1960	13.6	13.1	10.5	9.1
1961	13.9	11.7	9.9	9.4
1962	14.6	12.0	10.9	11.6
1963	14.7	12.0	11.6	10.4
1964	13.7	15.0	12.4	10.3
1965	12.5	15.6	11.9	10.9
1966	11.7	16.8	10.9	9.8
1967	11.8	17.1	9.3	9.2
1968	12.3	16.3	10.4	9.7
1969	11.1	14.4	12.4	11.3
1970	11.0	11.9	11.6	11.1
1971	12.5	8.1	11.9	11.7
1972	9.9	6.2	14.1	12.2

Source: Neil H. Jacoby, "Multinational Oil," p. 248. Petroleum data from Chase Manhattan Bank. Other data from, U.S. Department of Commerce, "Survey of Current Business," various issues.

The proponents of the Bayh Bill have not only failed to sustain the burden of proof that the U.S. petroleum industry is *not* competitive; they have failed to refute the substantial evidence that it is effectively competitive. Thus their contention that vertical disintegration is needed to restore competition falls to the ground.

7. *Vertical Disintegration Would Damage Consumers, Impair National Security and Probably Lead to Higher Concentration*

Substantial benefits have been derived by oil companies from vertical integration—reduced costs of production and lower risks and costs of capital. Given the effective competition that has prevailed in the industry, these benefits have been passed on to consumers of petroleum products in lower prices, improved products and more ample services. Such socially desirable effects are the proper objectives of Congressional policy. If vertically integrated firms were forced to disintegrate, these benefits would vanish. Other things remaining the same,

[18] *Op. cit.*, pp. 247–48.

prices of petroleum products would rise. product improvements would diminish, and services would shrink. Consumers would suffer, and the social consequences would be adverse as well.

Forced vertical disintegration would severely damage the national interest in achieving a larger measure of independence from foreign countries with respect to supplies of energy. The break up of large American oil companies would inevitably cripple the ability of a fractionated industry to finance high-risk exploration in the outer continental shelves, in the Artic, and in other remote and inhospitable regions where large reserves of crude oil may remain to be discovered. It would equally diminish the financial capacity of the industry to finance research and development aimed at producing synthetic fuels from shale, coal and tar sands, as well as from geothermal. solar and other exotic sources. Unless the Federal government undertook these tasks. in a first step toward nationalization of the petroleum industry, vertical disintegration would deliver a lethal blow to the concept of Energy Independence.

A little noted but no less important consequence of *vertical disintegration* of the U.S. petroleum industry would be a significant rise in its *horizontal integration* (concentration). A primary motive for vertical integration has been the desire to limit risks. Refiners enter crude oil production to assure a supply of crude. or they acquire service stations to assure marketing outlets for products. Forced vertical disintegration would restore to the smaller single-stage surviving companies the higher level of risk that was reduced by vertical integration. Many of these companies would be unable to survive periods of business adversity. They would suffer bankruptcy or seek mergers to become larger and stronger companies, better able to carry high risks. Horizontal integration is also a device for reducing risk by geographical diversification of markets and extending product lines. With foreclosure of vertical integration as a risk-limiting strategy, strong market forces would be created to produce larger and financially stronger firms. After a decade or so, the oil industry might well end up with a *higher level of concentration at each stage* than obtains today. The ironic result of legislation intended to produce smaller firms in the petroleum industry might be to enlarge their average size!

8. Vertical Disintegration Would Weaken—Not Strengthen—the Power of the OPEC Cartel

Some argue that vertical disintegration of the big U.S. oil companies would hasten the break-up of the OPEC cartel by making it more difficult for the oil-producing countries to allocate supplies of crude oil among markets and countries. The big oil companies, it is said, assist the OPEC in maintaining its monopoly power because they profit by it.[20]

This argument is erroneous. It is untrue that the OPEC could not function without the "cooperation" of seven big oil companies. These companies do *not* decide the total amount of crude oil to be produced by the OPEC members, or "prorate" the total allowable output among the producing countries. Those decisions are made by the OPEC. Indeed, it is precisely *OPEC's* ability to restrict aggregate oil production and to prorate the total among its members that enables it to maintain its high price of crude oil. The oil companies are helpless bystanders in those decisions. They merely buy oil from OPEC's members at OPEC's prices and sell what the market will take at a price which will, hopefully, cover their costs and yield a profit.

Multiplying the number of buyers of crude oil from such countries as Saudi Arabia, Kuwait or Iran would actually make it *easier* for the OPEC to maintain a high price and a low output of crude oil. OPEC would then be dealing with many economically weak buyers instead of a small number of economically strong buyers. It would be able to play off the many small buyers against each other more readily than it can under present circumstances. These buyers, if U.S. oil companies operating in the *post-divestiture* period, would have even less bargaining power with the OPEC than the little they have today, because they would lack control over the transportation, refining and marketing facilities the OPEC needs. While world oil markets would probably operate less smoothly than today, because of poorer coordination of flows of crude oil and petroleum products, supplies would continue to be allocated in accordance with changes in supply-demand relationships in the various countries. This allocation process

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[20] Testimony of Anthony Sampson, *Congressional Record*, Senate, February 3, 1976.

can occur with many buyers of crude oil as well as with few. OPEC does not need to maintain the present structure of the industry in order to maintain its monopoly power.

Moreover, OPEC monopoly power has been exercised against the oil companies as well as against consumers of petroleum products. The evidence shows that their profits per barrel of OPEC crude oil during 1974 and 1975 have averaged *less* than they did before 1973.

Another flaw in the argument is that *horizontal* rather than vertical disintegration of the big oil companies would be the appropriate remedy, *if* the public interest would be served by multiplying the number of buyers of Middle East oil. The *vertical* disintegration proposed by the Bayh Bill would leave the number of buyers of OPEC oil undisturbed. But it would, as noted previously, weaken the bargaining position of those buyers with the OPEC members, by depriving them of their downstream facilities. The four stockholders of ARAMCO, for example—Exxon, Mobil, Socal and Texaco—would be forced to divest their transportation, refining and marketing assets if they elected to remain in the business of producing and selling crude oil. From OPEC's point of view, they would be less reliable offtakers of oil than the integrated oil companies of foreign nations with which the U.S. firms compete. However, horizontal disintegration of U.S. oil companies would also strengthen rather than weaken the OPEC for reasons already stated.

The only effective way for the United States to weaken the OPEC cartel is first, to conserve energy, second, to develop alternative energy sources of comparable magnitude, and third, to take leadership in forming a coalition of the important oil-importing nations which can join with the OPEC nations in writing a world petroleum agreement. Passage of the Bayh Bill would weaken the bargaining position of U.S. oil companies and would hurt U.S. consumers. It would thereby operate to extend the effective life of the OPEC cartel, and delay the day when normal economic forces destroy its power.

9. Conclusion

The case against enactment of the Bayh Bill is overwhelming. The theses on which it is based are false. The U.S. petroleum industry is relatively unconcentrated, both vertically and horizontally. Available evidence shows that its behavior is as effectively competitive as is its structure. This conclusion is buttressed by the competitive behavior of the *foreign* oil industry, despite a somewhat more concentrated structure than that of the domestic industry. Vertical disintegration would damage consumers of petroleum products and impair the national security interest in lessened dependence upon foreign supplies of energy. It probably would lead to bankruptcies or mergers to achieve financially stronger firms better able to survive the inherent risks of the oil industry—risks that would be increased as a consequence of the Bayh Bill. And it would serve to strengthen the OPEC cartel and prolong its effectiveness.

SUMMARY FOR THE PRESS

"Forced vertical disintegration of large American oil companies, proposed by the Bayh Bill (S. 2387), would lead to higher-priced petroleum products, would increase U.S. dependence upon foreign energy, would strengthen and prolong the effectiveness of the OPEC cartel, and would probably lead to much horizontal integration (concentration) of the oil industry. It is contrary to the public interest and should be defeated."

These conclusions were stated by Neil H. Jacoby, Professor in UCLA's Graduate School of Management, in testimony today before the Subcommittee on Antitrust and Monopoly of the U.S. Senate. Jacoby, a member of President Eisenhower's Council of Economic Advisers, is the author of a recently published book, *Multinational Oil*, reporting the findings of an intensive study of the foreign oil industry since World War II.

Jacoby said that available evidence shows the U.S. petroleum industry to be relatively *un*integrated and *un*concentrated and its behavior to be effectively competitive. Oil company profits have been normal.

Competition in the foreign oil industry is significant in judging competition in the domestic industry because the same companies, technologies and business practices are involved. His study shows that the foreign industry was competitive during the past twenty years. There was no cartel of seven big firms—the so-called Seven Sisters. More than 300 private and 50 government firms entered

the industry and carved out for themselves large shares of the world oil market. The supply of crude oil was not restricted—it multiplied ten times during 1948–1972. After 1957 crude oil prices fell steadily for 14 years up to 1970, when the OPEC began to exert its power. Market shares of the big firms fell, as those of the entrants increased. Profits were a normal 12–13 percent of net worth after 1957.

"Vertical disintegration of big oil companies would increase the prices of petroleum products to U.S. consumers. It would cripple the ability of the industry to finance new exploration, and the research needed to develop new energy sources. Small single-stage companies would have less bargaining power with the OPEC countries than do present integrated firms, and foreign integrated companies would tend to take over Middle Eastern Oil. Finally, disintegrated companies would tend to merge into larger companies, better able to carry high risks, and this would probably lead to a more concentrated oil industry in the end," Jacoby concluded.

Senator HRUSKA. Thank you, Mr. Jacoby.

Will you, in some fashion, with your staff or otherwise, furnish a resume of your career, so that we may include it in the record to allow readers of that record a little consideration on your qualifications.

Mr. JACOBY. Yes, sir, I will.

Senator HRUSKA. We do know that you have served as a public member of the Pay Board and you were a member of the Council of Economic Advisors, at one time.

How long were you on the council?

Mr. JACOBY. Two years, in the middle fifties.

Senator HRUSKA. And you are a member of the Graduate School of Management of the University of California, Los Angeles.

Mr. JACOBY. I was Dean there for 20 years; I am now a professor there.

Senator HRUSKA. With your permission, Mr. Shillito, and yours, Professor Jacoby, any questions that we might ask can be answered interchangeably between you or by both of you, or by either one.

Mr. SHILLITO. Thank you.

Mr. JACOBY. Thank you.

Mr. SHILLITO. Mr. Chairman, I might make an observation that I find rather fascinating. I have neither seen or talked to Professor Jacoby for several years; I didn't know that he was going to be here today.

We have approached this subject from different aspects, one the economic, the other national security, and I find myself absolutely fascinated as to the similarity of our outcome relative to the bill.

Senator HRUSKA. Well, we are grateful for that observation. We will probably form our own evaluation as to the subject—and I know you would not deny us that opportunity.

Mr. SHILLITO. No, sir.

Senator HRUSKA. Reference was made in your statement, Mr. Shillito, as to the testimony which you gave on January 22, 1973. That had to do, as I understand here, with the national security aspects and the impact of the import and the domestic supplies of petroleum upon the Department of Defense and on our military posture; am I correct?

Mr. SHILLITO. That is primarily correct, yes.

Senator HRUSKA. If staff will get that testimony, keeping it to a minimum, excerpt from that record, some of it for the record of our present hearings, it might be helpful.

Mr. CHUMBRIS. Yes.

Senator HRUSKA. And the same with reference, briefly and concisely, to some of the highpoints of 1969, statements with reference to this aspect; to wit, national security and impacts that may be suffered by it.

Mr. CHUMBRIS. Yes, sir.

Senator HRUSKA. Now, Mr. Shillito, you also referred to a Washington Star article in your statement, having to do with the respective progress of the U.S.S.R. and the United States of America in military posture.

Can you refer to that more specifically, as to dates.

Mr. SHILLITO. Well, yes. I was talking about last evening's Washington Star; and the article, interestingly, was written by Mr. Bradget. He was talking about the significant progress that has been made by the Soviet Union. I was most impressed as he compared the various elements of international security posture, even to armored personnel carriers, tanks, et cetera.

In 1970, I made a very extensive, highly classified study of the Soviet versus the United States; and, at that time—6 years ago—I was quite concerned as to the progress they were making. The comparative trends of the two countries was most disturbing. But now, much that is coming out, in the press, emphasizes and supports a lot of the things that were a part of that study.

I was fascinated, too, Mr. Chairman, yesterday, to read the New York Times and note in the Times that we are now faced with a situation where—if I were to accept the article written by Leslie Gelb, that we are now virtually at the point of resolving our detente issues with the Soviets. I am talking now about the SALT negotiations—I was impressed with, what I hope is wrong, a statement to the effect that we are thinking seriously of giving up the Strategic Submarine Launch Cruise Missile; and, from everything that I can hear and read, this would appear to me to be the single U.S. weapon that the Soviet Union is most concerned about, the Strategic SLCM.

But the single point that I make is that we have either been overtaken or will be overtaken on virtually every phase of our national security posture, in comparatively short order, if you read and analyze the very obvious trends.

I think I cover this fairly well in my statement.

Senator HRUSKA. Yes.

Mr. SHILLITO. By the way, I have an interesting set of maps here that you may have if you like. I have, as a company, a very minor interest, almost insignificant interest, in the particular product, but the maps fascinated me.

When I looked at the February 2 "Aviation Week" article, which I will also furnish a copy of, which has extensive information on Soviet cruise missiles; and I looked at what I think would be the impact of presently available Soviet cruise missiles, particularly submarine launch cruise missiles, and the impact of such presently avail-

able Soviet weapons on the United States versus the insignificant impact of such weapons on the Soviet Union which we not only still don't have yet but which does appear to be in the prrocess of giving up in this next series of negotiations, I get very very disturbed. By the way it really does not take much more than a 300-mile cruise missile, on the Soviet's part, to virtually destroy 60 percent of the U.S. population—and we cannot touch the Soviet Union with anything like that ourselves.

Senator HRUSKA. Well, those will also be accepted for the record, and staff will make a culling of them, so that they will be only concisely relevant.

Mr. SHILLITO. Fine.

Senator HRUSKA. Those are considerations of larger areas, but let us zero in, for the next few questions, Mr. Shillito, on the impact, the role of an assured source of petroleum in time of a national emergency. You get into some figures in your statement, as to military consumption of petroleum products.

Can you expand upon that?

When you say "1,090,000 barrels per day, which is what the consumption was during the Vietnam engagement," was that, overall, in the Department of Defense or did that relate particularly to the Vietnam engagement?

Mr. SHILLITO. Mr. Chairman, that was the maximum consumption experienced during the Vietnam engagement, 1,090,000 barrels per day. We experienced a maximum consumption in World War II of about 1,600,000 barrels a day.

I am of the opinion, recognizing the Vietnam engagement as being somewhat unique and that our losses, as far as aircraft, as far as the sealanes, et cetera, being insignificant, I am of the opinion, recognizing the depleted state of our military forces today, that we would probably not be able to consume more than 1,090,000 barrels per day under almost any kind of conflict that I would envision. So I would look at the national security issue as being broader than a matter of pure consumption.

Senator HRUSKA. Well, now, you mention the figure, "10 percent of the domestic supply capability." When you say "capability," do you mean origin here and disregarding the factor of imports?

Mr. SHILLITO. Yes, sir. I would think that our capability would be such under an emergency whereby our national security requirements under an emergency would not demand more than 10 percent of our total supply capability; and this might require rationing or it might require a lot of things, but——

Senator HRUSKA. Well, what was the normal consumption of the defense establishment and defense machinery without Vietnam, without World War II? For example, conditions such as those which prevail today.

Mr. SHILLITO. I would like to correct the record on this statement, but I would assume that today we are probably talking about 400,000 to 500,000 barrels per day, but I would like to give you the exact number. The Department of Defense current consumption of petroleum products rangs from 450,000 to 500,000 barrels per day.

Senator HRUSKA. Please give the percentage of the supply capability.

Mr. SHILLITO. The percentage of DOD current consumption to total U.S. production is approximately 5 percent.

Senator HRUSKA. And could you make comment in that regard as to the entire availability of petroleum supplies, including imports? That would give us a standard of comparison, then, when we contemplate the possibility of a reduction in imports.

Mr. SHILLITO. Worldwide production of petroleum supplies, including communist countries, is about 50 million barrels per day. The Department of Defense purchases 25–30 percent of its current requirements from foreign refineries. Historically, about one-third of the Department of Defense petroleum consumption had come from foreign sources, as you know, sir.

Senator HRUSKA. Now, of course, the military, in times of emergency, is only a part of our problem, isn't it?

Mr. SHILLITO. Indeed, sir.

Senator HRUSKA. So, immediately, we get into an increased concentrated production in our industrial economy of war goods; and that means the necessity and the demand for greater petroleum consumption; does it not?

Mr. SHILLITO. Indeed, that is correct, sir.

Of course, again depending upon the type of conflict, if we were to think in terms of the type of conflict represented by Vietnam and Korea, indeed, that is the case; if we are talking about a nuclear exchange, it is a completely different situation entirely. But, hopefully, that is not the kind of thing we will ever be faced with—but, indeed, that is correct.

Senator HRUSKA. And is the further factor of transportation, which depends entirely upon petroleum imports, or virtually entirely?

Mr. SHILLITO. Heavily upon petroleum imports; and, also, we must recognize that such petroleum imports, depending upon the type of confrontation, will require the support and protection of a national security capability, a strong national security capability.

Senator HRUSKA. The quotation you included in your statement of Secretary Laird in 1969, when he says, "We must look beyond 1980 when the larger oil-producing areas of the Western Hemisphere will most probably begin a period of decline. Security in that period will depend heavily on the degree to which alternate energy sources have been developed in the 1970s, "what comment would you have upon the Nation's success in generating and sustaining an increase in alternate energy sources within the United States during the 1970s so far—and we are halfway through that decade?

Mr. SHILLITO. Well, as I am sure it becomes somewhat apparent—and I don't mean to be overly critical—but I look back at the 1969, the 1970, and 1972 period; I look back at the very strong statements that were made by myself, Secretary Laird and others, to the Oil Policy Committee, to the Chairman of the Council of Economic Advisers; I look back at the extensive discussions and so forth that have gone on over these past 7 years, and I have to say, Mr. Chairman, that I am saddened by the accomplishments to date and I am pessimistic as to the accomplishments for the future. We are far from moving in a satisfactory and a self-sufficiency direction, in my mind.

Senator HRUSKA. Mr. Jacoby, have you any comment on that question?

Mr. JACOBY. Well, yes, I do. I would state the point, I think, even more strongly than Mr. Shillito has.

I say that we not simply have failed to make any progress toward energy, self-sufficiency but, in the last 2 years, we have virtually killed 2 years without any achievement toward a coherent national energy policy, and we are now more dependent than ever—we are moving toward more dependency day by day.

Mr. SHILLITO. That is right.

Mr. JACOBY. I think this should be a matter of very serious concern to us, not only in connection with our national security in a military sense, to which Mr. Shillito has referred, but also the additional constraints it puts on our negotiating ability in our whole international relations.

Senator HRUSKA. Now, let me superimpose upon that condition to which you have referred, and upon which you have testified. As I got it, there is a lack of suitable increase of development and protection of the domestic supply.

Is that a safe statement for me to make?

Mr. JACOBY. I believe it is.

Senator HRUSKA. Now, then superimposed upon that, let me hypothesize just a little bit, because we have had testimony here by people who are investing experts and financing experts and who have given reasons for their conclusions that the enactment of a divestiture bill such as we have in S. 2387 will result, at a minimum, in litigation which will last from estimated periods anywhere from 8 to 10 years to 20 years, with a very stultifying effect and impact upon the four component parts of the petroleum industry as we have them formulated today.

What impact do you think that would have, Mr. Jacoby, upon the petroleum picture and upon the continued production and progress of our development of available petroleum supplies.

Mr. JACOBY. Well, it seems quite clear to me that it would have a very depressing effect upon both capital expenditures in exploration for crude oil in the Outer Continental Shelves where you're working in deep water and you need large amounts of funds to drill.

That it would also diminish greatly the amount of research and development spending by the oil companies on the extraction of from coal, or the liquefaction gasification of coal, or the extraction of oil from shale and the tarsands, so-called "syn-crude" projects.

These, too, require enormous amounts of money from private sources, as well, of course, as Federal help in financing. So that, taking those two things together, it is quite obvious that the passage of this bill and the ensuing period of uncertainty and litigation would retard any further movement toward energy independence.

In fact, I think it would kill the concept. It would make it unrealizable.

Mr. SHILLITO. May I make a comment, Mr. Chairman?

Senator HRUSKA. Indeed. I wanted to ask you with particular reference again to your contemplation of that situation in the prospect and on the basis of a hypothesis, how it would affect national security and our insurance?

Mr. SHILLITO. Well, of course, it would affect national security as far as availability. Again, keep in mind that national security and the country's economic well-being go hand in hand. But, there is a fundamental thing about investing. If you are going to invest in virtually anything, a capital investment of any form, you just do not make an investment when you are talking about something that is involved in litigation or potential litigation and the uncertainties that are brought about by such litigation. You just do not invest. This is a very fundamental thing as regards investment on the part of virtually any business.

I had an interesting experience about 3 weeks ago, I was in Dallas for a couple of days on a totally different subject, and I was fascinated by a couple of comments that were made by people down there that relate to the dicussions that have gone on and this legislation being considered. Uncertainty—maybe that is the key word—the uncertainty that has been brought into this segment of our economy right now has apparently had an impact already on exploration.

I cannot assess this because I do not know what the figures are. But we have already brought an uncertainty into this piece of our economy that I think is already having an adverse economic impact and is being reflected by a falloff in exploration.

Mr. JACOBY. May I add a point to that, Mr. Chairman?

Senator HRUSKA. Indeed.

Mr. JACOBY. I think the experience with the North Sea is illuminating in this connection. What happened was that the labor government of Britain renegotiated the terms on which oil could be produced in the North Sea unfavorably with respect to the producers, the oil companies. And that has brought to a virtual standstill all new exploratory activity in the North Sea. This shows how sensitive investment is to the prospective rewards and the degree of risk that the investor receives.

There can be no question that the enactment of this bill would plunge the whole oil industry into a period in which it would be very hard for investors to assess the risk of investing in Exxon, let us say. In the first place, we do not know what branch of the industry Exxon might choose to stay in. The effect would be extremely depressing, almost paralytic.

Senator HRUSKA. Now, getting down to a specific, have you given consideration in your studies and in your survey of this field, Professor Jacoby, to the pipeline as an independent segment of the petroleum industry and what their future would be if divestiture were ordered and attained?

Mr. JACOBY. Well, I am very glad you raised that question, Mr. Chairman. I have not, myself, studied the pipeline aspect of the industry as carefully as I would like.

I know there has been a great deal of testimony before this subcommittee. I have read it. And it seems to focus on the alleged anticompetitive effects of the present system of pipeline ownership. And it may be, indeed, that there are some aspects of oil transport in this country where structural improvement is possible, either by converting private pipelines into common carriers or some other device of that kind. I simply feel myself insufficiently informed to have a

strong opinion. But my advice to the committee is to look into that aspect of it. We do not need to swat a mosquito by firing a guided missile at him and it seems to me that this bill, in effect, does that sort of thing. If there is an imprrovement to be made in pipelining, and this may be possible, then it should be solved and cured by specific legislation.

Senator HRUSKA. There was some testimony to the effect that the trans-Alaska pipeline could not—would not have been built—could not have been built, if this bill were statute, in the form of law, during the time of its formation. As a matter of fact, there is some danger, according to some witnesses, that the completion of the pipeline, if this bill were enacted into law this session of Congress, would be possible. I understand the press indicates that there is pending now the marketing of about 1.2 or 1.3 billion of additional obligations for the purpose of furthering the construction of that line, which would be impaired by the passage of this law, or even substantial progress of this bill in the legislative mill because of the chilling effect of investors which was referred to by Mr. Shillito. Does that make sense?

Mr. JACOBY. I have not studied that particularly, but it seems very credible to me.

Senator HRUSKA. We have also currently pending something that is very dear to the hearts and hearths of my area of the Middle West. And I live in Omaha, Nebr. And that is the construction of a pipeline from Canada down into through Minnesota and filtering down into the Middle West. And there is discussion in the journals and also in the press, if this bill advances and makes progress toward enactment that we might as well forget about that pipeline up there because we will not have those who will be interested in investing in a pipeline of relatively parochial area because of the economics of the thing.

And we do not like that in our part of the country. Not only the homes but our factories because we are looking for natural gas. Now, if we are going to destroy the possibility of the building of that pipeline, we can just as well forget about it and resort to maybe cordwood from Minnesota and northern Wisconsin. And we do not have any trees in Nebraska to speak of. We would have to resort to cordwood for our energy forms. And, of course, the same applies to farms, because we need petroleum products for our farms. This suggestion I make facetiously. Does that ring any thoughtwaves from your judgment?

Mr. JACOBY. Yes, it does. We know that pipeline financing is almost always predicated upon the negotiation of long-term contracts to utilize the pipeline facilities. And this fact raises an interesting question, among many that the S. 2387 raises. And that is, if you force divestment, vertical divestment, what do you do about 20 to 30-year supply contracts which may be another way of reunifying the two stages of an industry on somewhat different legal terms than they were previously. Long-term supply contracts, in other words, could be a means of avoiding some of the worst consequences of vertical divestiture. They are not dealt with, I believe, in the bill itself. But this is just one of many obscure issues that the bill raises.

Senator HRUSKA. Some attention has been given to and some comment has been made on the exchange contracts, the exchanges of various petroleum companies of supplies of their product in shifting it around. Are you familiar with that aspect of its marketing?

Mr. JACOBY. Yes, I know something about that.

Senator HRUSKA. Then if this bill became law, and we have a breaking up not only of the four component elements of the present petroleum industry, but also the impact, whatever it will be, upon the size of the companies that will function within each component element, will the exchanges of product still occur or would they be abolished?

Mr. JACOBY. Well, again, that involves a legal interpretation of the bill, which I have not tried to make and perhaps, not being a lawyer, I am incompetent to make.

But let me simply say that exchanges have been criticized by critics of the industry for many, many years. In my judgment, they are not anticompetitive features of the industry. They are ways in which integrated companines and nonintegrated firms, too, can obtain the kinds of crude oil that they want for their refineries that they have available to refine it at less cost than if the exchanges were prohibited. They are, in short, not anticompetitive, but operate to increase the overall efficiency of the industry and to help keep down the prices of petroleum products.

Senator HRUSKA. Well, thank you very much.

Dr. Measday, I apologize. I have not looked at my watch in the last 30 minutes. I wanted to give you more time for your questions.

Dr. MEASDAY. That is all right. It was fascinating to listen to yours, Senator.

Senator HRUSKA. Well, you have some questions and ——

Dr. MEASDAY. How much time do we have?

Senator HRUSKA. We have to be out of here by 11, and we want a brief statement from Mr. Collins before we adjourn. Go ahead.

Dr. MEASDAY. I think, first of all, since both of you gentlemen are from the west coast, and I believe Professor Jacoby has been a director or is the director of Occidental.

Mr. JACOBY. I am.

Dr. MEASDAY. Probably, for energy self-sufficiency, we are going to have to have either oil shale or coal liquids. And Occidental lit off its in situ experiment, I think, last July. I wondered if there has been any report at all on that topic.

Mr. JACOBY. Well, I checked up on it last week. Occidental began what we call a burn in this large commercial chamber, which is of commercial size, and is designed ultimately to produce 500 barrels a day. And it is now producing 200 barrels a day. The burn has not yet reached its peak coverage, and we still hope that it will come up to a level of 400 to 500 barrels a day. I think I can safely say that more oil is now being produced per day than has ever been produced before from shale.

Dr. MEASDAY. From shale; that's, I think, the most hopeful news we have had in a long while.

I would like to ask Professor Jacoby a few questions here. Both you and Professor Mitchell conclude that the oil industry is actually

less vertically integrated than most other industries, and you both cite Adelman and Gort. Now, Adelman compared what he called corporate income, wages and salaries, and profits before taxes, and interest paid, to corporate sales as an index for vertical integration.

And he proved by that that the furniture industry, in 1949, was more integrated than the oil industry. I think when you look at the date, that the difference is almost entirely in wages and salaries. Now, I would just like to suggest here that what Adelman really showed was that in 1949 the furniture industry was more labor intensive and less capital intensive than the oil industry and not much more than that. I wondered if you have a comment.

Mr. JACOBY. Well, the Adelman measure, as I interpret it, is a rough approximation of the ratio of value added to sales; rather rough. I have thought about the question of measuring objectively the degree of vertical integration, and I have been unable to think of a better way. But I must confess that I am not entirely happy with that method.

Dr. MEASDAY. Yes. Will you agree that there has been, in the last 25 years, a considerable degree of backward vertical integration by the major oil refineries?

Mr. JACOBY. You mean backward toward the acquisition of crude reserves?

Dr. MEASDAY. Of crude reserves.

Mr. JACOBY. Yes; there has been some.

Dr. MEASDAY. So things have changed a lot since then, And on horizontal concentration, I think the majority staff agrees with you that concentration is really very moderate at each functional stage in the petroleum industry. And our hope is, I suspect, that by eliminating vertical integration, we may very well get workable competition at each stage, given existing levels of concentration. Would you have any reaction to that?

Mr. JACOBY. Would you repeat that statement, please?

Dr. MEASDAY. Yes. Let me put it this way: The majority staff recognizes that concentration ratios at each functional level of the petroleum industry are very moderate—I think Senator Hart has made this point—which is the reason why we feel that, with vertical divestiture, there is plenty of scope for workable competition at each stage. I wondered if you had any reaction to that.

Mr. JACOBY. Well, of course, I would argue that we have very effective competition today, without any vertical dismemberment. I must simply repeat the arguments made in my formal paper, that we start from a situation of a relatively unconcentrated industry, both in the horizontal and the vertical dimension, and one in which, by all tests that we can apply, there is effective competition. Then, when we look at the proposal of vertical disintegration, what we foresee is the cancellation of many risk-limiting devices and cost savings, which, in a competitive regime, would mean higher prices to consumers.

So that the proposal of vertical disintegration does not increase competition. It simply arbitrarily imposes a structure on the industry that would result in higher costs and higher prices.

Mr. SHILLITO. In fact, I think you can make an assumption that ties to so many things in our society relative to vertical integration.

Frequently such integration allows for the synchronization of elements leading to efficiency. In fact, you can take some of the major success stories that we have had in the last decade—take the Apollo program— and look at the complete vertical integration of the integrated logistics support program for the Apollo program. You could not have done this had we broken each element of that program apart and not integrated and synchronized these elements. I would not want to suggest that the analogy is completely correct, but there is a lot of similarity.

Senator HRUSKA. We have been joined by Senator Mathias of Maryland. Do you have any questions or observations, Senator? He's a member of this subcommittee, incidentally.

Sentor MATHIAS. Thank you, Mr. Chairman.

I have, as these hearings have gone on—and they have gone on for quite a while—been impressed by the strength of the arguments against disintegration, the economic arguments. At the same time, there is a very real, a very active and a very live concern about concentration of economic power, represented by the vertical integration of the petroleum industry. And the arguments speak so strongly on both sides that it is the natural instinct of those of us who have to make some ultimate decisions to start adding the equities up and see where you end up.

Have either of you considered what possible alternatives there might be to solve the dilemma in which our subcommittee finds itself? Have you considered what you do when it is, in effect, a monopoly problem for which there is no readily available practical answer? Would it be possible, for example, to say that the transportation facilities, which form a component of the integrated companies, are vested with the public trust and subject to some special supervision, but not necessarily disintegrated from the corporate unity?

Mr. JACOBY. I would make a comment, Senator, in response. Earlier, I did mark out the pipeline problem as one that seems to me deserving of further inquiry. There is no monopoly here. We are dealing with a competitive industry. Nobody has reaped a monopoly profit, if you look at the data, the figures. And many people have looked at it and——

Senator MATHIAS. You are talking about pipelines, now?

Mr. JACOBY. You are speaking just of pipelines?

Senator MATHIAS. Well, I am not limiting it to that. I thought you were just speaking of pipelines. I want to be sure we were on the same track.

Mr. JACOBY. Well, I was speaking of the industry overall, the overall level of profitability in the American petroleum industry. It has been normal for many years. You had this big spurt, of course, in 1974, after the OPEC pipe rise, but, as Mr. Shillito explained, this was largely——

Senator MATHIAS. Inventory replacement, really.

Mr. JACOBY. Yes; now, it appears to me that, instead of Congress discussing breaking up the oil industry vertically, which would have, for many reasons stated here, many disastrous consequences, that a further inquiry into the problem of pipeline ownership might well be undertaken. I have not studied that in detail, and I would refrain

from expressing an opinion. I just do not feel well enough informed as to whether there are anti-competitive elements in the present pattern.

But, when you spoke earlier about these great concentrations of power, it seems to me we have to factor out two things—economic power and political power. Now, if there is no monopoly, there is no undue economic power. We have dealt with that. So that we come, then, to the question of whether these large oil companies have a lot of political power. As I read the record, the reverse is the case. And I think one of the things that Mr. Sampson's book The Seven Sisters, brought out, was the actual impotency of the big oil companies in their confrontation with the Middle Eastern countries and with the OPEC to make their position felt in our own State Department.

Rather than having political power, they found they were completely lacking in it. The truth is that they lack political power of any consequence. Foreign policy in the United States has been conducted without any reference to the interests of the Middle Eastern oil companies for quite a few years, as I read the record. Now, if they had a lot of political power, they would have a lot of influence on that policy. I defy anyone to show me that they have that.

Mr. SHILLITO. A comment, Senator Mathias: First: I completely totally agree with Professor Jacoby that we are not looking at a monopoly industry, even though my interests are tied more to national security than economics in this instance. But I, too, have an economic background, and I agree totally with the points made by the professor. When I compare this industry to other U.S. industries, it is much less a monopoly.

But, in line with your question as to alternatives, I feel that the oil companies, indeed, are open for a lot of criticism, without question. And I think that it is proper that they be criticized. At the same time, I think that they should not be completely restructured because I think that they have been comparatively efficient, when you realize what they have been able to accomplish over the years. But I think it behooves us to attempt to do everything possible to insure greater efficiency on the part of these integrated companies.

I think it is almost essential that we not tinker with this economic element that we have in being to the detriment of all of us. It was suggested that the litigation that might come about as a result of that which has already happened; by this suggested legislation is going to cause people not to invest if this litigation requires an extended period of time. It is a fact that people just do not invest during periods of uncertainty. This litigation and the suggested legislation creates uncertainty.

If people do not know what is going to happen, and they feel that there are potentially severe economic changes going to take place, they will not invest. This may already be having an impact on exploration.

And, then, last but not least, I really feel that we have got our priorities out of line, and the disintegration of the oil companies is really a secondary priority as related or as compared to energy self-sufficiency. This is really something that we ought to be devoting our attention to, rather than breaking up and maybe even adversely affecting our energy self-sufficiency. I think that it becomes very important that we get on top of this energy self-sufficiency subject. And we really have not done much about it over the past 7 years.

Mr. JACOBY. I concur completely. This bill directs attention to a nonproblem; thus, it seems to me, serves to divert attention from the real problem of energy in this country.

Senator MATHIAS. But you do feel that there is a public interest?

Mr. SHILLITO. Yes; I do, Senator, indeed. There is a public interest, yes, sir.

Senator HRUSKA. Would the witness yield?

Is it not a fact that the recognition of public interest is found in the classification of pipelines as common carriers, and they are supervised and regulated, with the exception of one or two lines in California, which confine their activities to within the State? Other than that, it is the Interstate Commerce Commission, I believe, that is regulating it. And they could not do that, they would not have jurisdiction to do that, except for the basis of a public interest. Is that right?

Senator MATHIAS. Though the chairman is right, as he usually is, there is a question of how well the ICC is regulating. But that is a separate issue and we will not get into that. But I do think it is part of the problem.

Senator HRUSKA. It is part of the problem, and it is recognized as such.

Well, we want to thank you two gentlemen for coming.

Now, if there occurs to either staff or other members of the committee questions they would like to submit, we hope you would be available to furnish replies to the questions for the record.

Mr. JACOBY. We will be happy to.

Senator HRUSKA. Thanks so much for coming.

Mr. JACOBY. Thank you.

Senator HRUSKA. John J. Collins is here. He is an added witness to the list of witnesses for today. For more than 35 years, he has been adviser to several separate independent unions representing seagoing personnel employed aboard the American flag ocean-going tankers of major companies and others.

Mr. Collins, you have kindly supplied the committee with a copy of your testimony, and it will be included and incorporated into the record in its entirety. Would you have a brief comment and characterization of your position?

STATEMENT OF JOHN J. COLLINS, ADVISER TO INDEPENDENT UNIONS REPRESENTING SEAGOING PERSONNEL ABOARD OCEAN-GOING AMERICAN FLAG TANKERS OF MAJOR COMPANIES AND OTHERS

Mr. COLLINS. Thank you, Mr. Chairman. First, I deeply appreciate the fact that you have made a few minutes available to me because, only a week ago, I thought that after reading about the bill, that maybe the independent unions representing the seagoing employees in several of the major oil companies, such as Exxon, Mobil, Texaco, and Getty, have a concern also because any breaking up, any chopping up, of these companies certainly would adversely affect the particular economic interests of these employees because they are, generally speaking, long-service people. Some who served during World War II are still employed. Their contribution is indicated in my prepared statement.

Even before Pearl Harbor, Exxon and Mobil ships were carrying cargoes of needed petroleum to the Allies under arrangements made by the U.S. Government. At least two of these vessels were torpedoed during this pre-Pearl Harbor period. On November 20, 1941, 17 days before Pearl Harbor, the Mobil tanker, *Astral*, sailed from Aruba for Europe with a cargo of gasoline and kerosene. It disappeared with all hands before reaching its destination. Years after the end of World War II, research in German archives revealed that the *Astral* had been torpedoed prior to December 7. There were no survivors.

It is not my purpose to review the past participation of major oil companies and their seagoing employees in wartime, nor to concentrate on the 43 tankers and 375 men lost in Exxon, the 24 tankers and 234 men lost in Mobil, the 7 tankers and 26 men lost in Texaco, and the 5 tankers and 100 men lost in Getty, due to torpedoing or shelling by enemy raiders. The records are in the National Archives, and the commendatory letters from War Shipping Administrator, Vice Adm. Emory S. Land and President Franklin Roosevelt are eloquent evidence of the significance of this contribution.

The reason for mentioning this at all is to point out that the very integration of these major oil companies made possible the expeditious handling of a sinew of war without which the United States could have been in far greater peril. Speed and coordination are essential, especially in a world conflict. Decisions made with the knowledge that the cargo is available, that the ships are ready, that the crews are experienced and loyal, is comforting when split-second decisions must be made.

As I am sure all thinking Americans agree, we are a great Nation. And, without being chauvinistic or super-nationalist, we are proud of our accomplishments; we are proud that we have a country that, after 200 years, has proved that, despite our differences, we have maintained a record of progress and decency toward each other that continues to be the wonder of the world. This has not been easy. And it has required many compromises. Even when our Constitution was being framed in Philadelphia in 1787, the essential element in the final drafting of that great document was compromise. And despite the differences between Jefferson and Hamilton, the concept of an integrated nation was accepted, a concept whereby the several States recognized the value of a Federal Government which would have the knowledge and the ability to act quickly and in the public interest on purely national matters.

And so in the oil business, within reason, the integration of a variety of economic forces—research, exploration, production, refining, transportation, and marketing—are but the parts of an organic body. Integrated oil companies have operated competitively under the careful scrutiny of the Justice Department, and in so doing they have provided a product and a service we all need in this mechanized world of ours.

In conclusion, my experience in bargaining with several of the major oil companies has convinced me that although there are similarities among them, the differences are substantial. There is no monolithic approach wherein what was bargained with one company becomes an absolute for another. Each agreement is different and

each is tailor made to fit the needs and desires of each group. Surely there are similarities in wages, overtime, paid vacations, and pensions, but for example, the Texaco officers would not be satisfied to have an Exxon agreement lock, stock, and barrel, nor would the Exxon officers want the Mobil agreement. This is the virtue of being independent and also being able to identify with a particular major oil company.

In an imperfect world, you gentlemen—meaning, you Senators—do the very best you can to keep this Nation together, and at the same time, listen carefully to the needs and desires of all of your constituents. And while the analogy may not be exact, I believe there is some similarity with major integrated oil companies.

If you consider a major integrated oil company as an economic asset and as a demonstrated "right arm" when national security is threatened, whatever faults these imperfect companies may have can be corrected without inviting the economic and national chaos which surely will follow the breakup of institutions which have grown organically and have taken generations to mature.

Apart from the inequities in respect to pensions and other special employee benefits that will be eroded or will disappear with any such dissolution of the companies, the consumer will face a world of economic unknowns.

With the increased costs resulting from many groups doing the same thing, the consumer has to be the one who has to pay. There is no one else. And what will our foreign friends and those not so friendly be doing while major American oil companies are being chopped up? Picking up the pieces, of course, and thereby making the United States even more vulnerable than it now is to unilateral decisions by those over whom we have no control. It is too frightening to contemplate seriously.

Thank you very much, Senator Hruska, and you other gentlemen.

[The prepared statement of Mr. Collins follows. Testimony resumes on p. 2256.]

PREPARED STATEMENT OF JOHN J. COLLINS, ADVISER TO INDEPENDENT UNIONS

Mr. Chairman and members of the subcommittee, I sincerely appreciate this opportunity to appear before this Committee. My name is John J. Collins. I am and have been for more than 35 years Adviser to several separate independent unions representing seagoing personnel employed aboard the American Flag ocean-going tankers of such major oil companies as Exxon, Texaco, Mobil and Getty.

During the life of these independent unions there never has been a delay in the operation of the vessels nor a time when any of the personnel employed on these ships has been off pay due to any work stoppage. I beieve that the contribution made by these crews to the stability of the American Merchant Marine, and by extension to the economy of the United States, and to the safeguarding of our Nation in time of war has been largely because their employers have been major integrated oil companies. That is why I am here on behalf of these employee groups to oppose any move to chop up these integrated oil companies.

This relationship, i.e. independent unions in integrated oil companies and the resultant economic stability plus the safeguarding of our Nation in time of war, may not be discerned readily by some—but to quote a great American, Al Smith, the former Governor of New York and Democratic Presidential Nominee, "*Let's look at the record.*"

Because there have been independent unions representing seagoing personnel in American Flag vessels of major integrated oil companies these companies

could and did innovate programs that benefited the industry—the particular employees—*and the consumer.* Let me cite just one example.

In 1946 Exxon (then Esso) negotiated with the independent unions representing their seagoing personnel, a revolutionary vacation plan whereby in exchange for certain practices, such as port relief and overtime, each employee was guaranteed 92 days of paid vacation in each year. This contrasted with the 30 days vacation he then enjoyed. Only the imagination and the willingness on the part of both parties—the company and the independent unions representing these seagoing employees—could have made such a program possible.

This pioneering in paid leave, as it is called, has been copied by other maritime groups over a period of years with varying differences and refinements, so that today in the American Merchant Marine the paid vacation pattern for all seagoing personnel is at least on a "*one* for *two* basis—namely one day of paid vacation for each two days worked.

I could cite many other individually bargained wage, vacation, and fringe benefit changes that have become bench marks in the maritime industry—some negotiated by the Texaco Tanker Officers Association, some by the Mobil Tanker Officers Association, plus modifications in their original 92 day paid vacation plan bargained by the Jersey Standard Tanker Officers Association with Exxon.

Although bargaining these changes has not always been marked by smooth sailing—agreements have been reached, and reached without work stoppages. That this has benefited all concerned, including the consumer, needs no elaboration.

Some individuals not cognizant of what takes place at the bargaining table many times assume that agreements when finally reached either are "sweetheart" agreements where no real bargaining takes place or power struggles where two economic giants battle—until they successfully have decapitated the consumer. The independent unions with which I have been intimately associated for more than 35 years fit neither of these descriptions.

They are not cream puffs nor are they spike shoed outfits. They come to the bargaining table armed with the knowledge of the needs and desires of their constitutents—their fellow shipmates; and they bargain vigorously for these needs and desires. The fact that the agreements they negotiate must be approved by the membership by secret ballot is a spur to achieve their objectives and brings a real sense of satisfaction when their shipmates give their efforts a "well done" by their ratification vote.

One of the basic reasons these independent unions have been successful in their economic efforts and have been designated by the various groups of seagoing employees over national unions—when Labor Board elections have been held—is the very nature of the major integrated oil companies by which they are employed.

An integrated oil company is, like any other company, primarily interested in making a profit. Employees who come to work for a company and remain with that company do so because it is a profitable company. No one wants to work for a loser.

One sure way of not making a profit is to have employees believe they are not being treated fairly. It is a truism that a business is its people—especially when that business is a service which tanker transportation is. In the bargaining process therefore the major integrated oil company has as a paramount objective to negotiate an agreement that will convince the employees that they have been treated fairly. This is not always easy—especially in the climate of the democratic process—since different individuals want different things.

You gentlemen, as United States Senators, know full well how difficult it is at times to satisfy the needs and desires of your constituents and at the same time be aware of the national interest; but you know it must be done.

A major integrated oil company dealing directly with its own employees via the employees' own selected independent union makes a serious effort to meet the needs and desires of its employees at the bargaining table. There have, of course, been crises from time to time but they have been mini-crises. The need to compromise, as you gentlemen so very well know, is at the heart of the democratic process. You, as Senators, want to keep our Nation on an even keel and at the same time be reasonably responsive to the various shadings in the viewpoints of your constituents. Major integrated oil companies in bargaining with independent unions want to keep their ship of state on an even keel—as do the employees since both are in the same boat, as it were.

The economic benefits resulting from a climate of compromise and good will on both sides spills over to the consumer either in price or service or both. I remember some years back at a bargaining session with Exxon when the employer negotiator stated that the Company was able to obtain a somewhat better charter rate from Consolidated Edison because based on Exxon's peaceful labor history in marine transportation, Consolidated Edison could be certain the cargo they ordered would be delivered on time. As a result there would be no interruption in Consolidated Edison's service to their customers.

Exxon employees *think* Exxon; Texaco employees *think* Texaco; Mobil employees *think* Mobil; and Getty employees *think* Getty. I don't mean they consciously wave the company flag every morning of their lives—but they intuitively know that they are an integral part of a large successful and generally respected company; and this is a *plus*—in benefits and job security—for them. Any breaking up of an integrated oil company could have catastrophic results for employees in pensions and other fringe benefits, to say nothing of the jeopardy to their job security.

We as Americans are brought more closely together, despite our political, economic and social differences because we *are all Americans*. Any break up of our political state would have disastrous results for all of us. Integrated oil companies like national states are the result of years of organic growth—a maturing process that has the logic and common sense of all institutions that grow from good roots. They are not just stuck together like children's building blocks. And you don't rip off an arm or a leg and expect it to function as well, if at all, as when it was an integral part of the part; nor can you destroy the integrity of a company and expect the parts to function as before.

The specifics of marine transportation are quite sophisticated and I certainly am not qualified to discuss them. However the advantage to the consumer it would seem is multifold where major integrated oil companies exit. For example, ships of major oil companies for the most part carry their own cargoes. Marine transportation is a service—a service ultimately to the consumer for whom the product, be it gasoline or heating oil, is being transported.

On countless occasions a loaded vessel destined for New York is diverted to Boston, Providence or wherever the product is more urgently needed. This requires both control and coordination. Major integrated oil companies possess this control and coordination and as a result can act expeditiously. The reverse of this situation is where a tanker in ballast has been ordered via radio to clean tanks to load a cargo of aviation gas, and in the middle of the tank cleaning process the Captain receives another radio message to put into a different loading port to load kerosene or some other product. The control exercised by a major integrated oil company clearly insures more efficient operation of their vessels.

The traffic department of a major oil company makes unusual demands of a ship and its personnel (which is why competent, experienced personnel are so important) in order to accommodate the consumer—be that consumer you or I or the United States Navy or Air Force or some utility that urgently needs the product. As I stated earlier the ramifications of supply and transportation are so great as to require the full attention of trained individuals who can call upon the services of their integrated company to obtain and move the product quickly and at a price that reflects the economies of such integration. A broken up, piece meal, arrangement would at the least underutilize tankers and at worst be chaotic. For the consumer this would result in poorer service at a higher price.

We all know that the fine tuning that a well put together orchestra needs. We even listen before an opera or concert begins to the fine tuning of their instruments by the musicians, so that when they play they play in complete harmony. In a similar sense an integrated oil company must have its instruments, i.e., refinery, transportation, etc., tuned to the needs of the consumer. The ability to carry many grades of cargo in the same ship and the versatility to discharge and load part cargoes and be *available at* almost a moment's notice is the real plus for a company. By this control they can instruct their vessels as to "when and where" a cargo should be delivered.

The reverse of this is to be at the beck and call of some fly by night shipowner who gets in the market when the rates are high, makes his killing, and runs when the rates drop. This feast or famine approach may fit the yardstick

of "supply and demand" but it leaves out the important element of stability of service, for which major oil companies are and should be held accountable.

But without integration it could become dog eat dog and the consumer could lose both in price and in service. Seagoing employees of major oil companies know this. They grip of course when orders are changed and ships are diverted, but they also understand that they are part of a team—the Mobil Team—the Texaco Team—the Exxon Team—the Getty Team—and *they want to stay on that team.*

Nowhere in the maritime industry will you find seamen with continuous employment records to compare with those employed aboard vessels of major integrated oil companies. Without trying to detail the reasons for this unusual situation we may use the cliche "they must be doing something right"; the "they" are both the companies and the independent unions that negotiate labor agreements with these companies. For example, the average length of service of a Chief Mate in Exxon is 15 years; in Texaco 12 years. Extra compensation has been negotiated to recognize this long and faithful service. The same kind of figures can be given for the other ranks and ratings.

A further fact that will demonstrate that seagoing personnel in the employ of major integrated oil companies are career employees is evidenced by the number of seagoing employees who have been retired with pensions—700 in Exxon; 291 in Mobil; 79 in Texaco; 120 in Getty. The number of retired employees is almost as great as the number of seagoing employees currently employed—at least for the licensed officer group. In the flotsam-jetsam maritime industry this is highly significant and speaks well for the companies and the independent unions that represent these seagoing employees.

In the rest of the industry identification is not made with a particular company but rather with a particular union. Without pursuing the reasons why this is so it would appear clear that the concern for cargo and ship exhibited by long service major oil company employees is inherent because they identify with their company.

Over the years, especially in Exxon, Mobil and Getty, seamen started their employment as unlicensed men and gradually worked their way up to become officers. These seamen were especially identified with their company. They were career employees. This was highlighted in World War II when men beyond the draft age stayed with their company and sailed the ships thru submarine infested waters rather than go ashore to work in a shipyard or a defense plant—where it was safe.

More recently major oil companies have been recruiting at the various maritime academies for their licensed officers; and here again the record indicates that those graduates who have gone with the major oil companies tend to remain. Their classmates do not achieve that same continuous identification with their employers. In short, the stability represented by major integrated oil companies benefits employees who are anxious to remain employed by what presumably they consider a good employer; the company benefits in the knowledge that they have *competent* and *experienced* employees; and the consumer benefits since he is certain that the service will not be interrupted and the price of the product will be competitive.

From another but certainly equally important angle the record of major oil companies during World War II is an enviable one. This contribution to the security of our Nation that was made, and could be made again, by seagoing personnel employed by the major oil companies is replete not just with stories of their sacrifice and heroism but with the logistical contribution so necessary in fighting a war on two widely separated fronts.

Even before Pearl Harbor Exxon and Mobil ships were carrying cargoes of needed petroleum to the Allies under arrangements made by the United States Government. At least two of these vessels were torpedoed during this pre-Pearl Harbor period. On November 20, 1941—17 days before Pearl Harbor—the Mobil tanker "Astral" sailed Aruba for Europe with a cargo of gasoline and kerosene. It disappeared with all hands before reaching its destination. Years after the end of World War II research in German archives revealed that the "Astral" had been torpedoed prior to December 7th. There were no survivors.

Now it is not my purpose to review the past participation of major oil companies and their seagoing employees in wartime—nor to concentrate on the 43 tankers and 375 men lost in Exxon, the 24 tankers and 234 men lost in Mobil; the 7 tankers and 26 men lost in Texaco and the 5 tankers and 100 men lost in

Getty—due to torpedoing or shelling by enemy raiders. The records are in the National Archives and the commendatory letters from War Shipping Administrator, Vice Admiral Emory S. Land and President Franklin Roosevelt are eloquent evidence of the significance of this contribution.

The reason for mentioning this at all is to point out that the very integration of these major oil companies made possible the expeditious handling of a siniew of war without which the United States could have been in far greater peril. Speed and coordination are essential especially in a world conflict. Decisions made with the knowledge that the cargo is available, that the ships are ready, that the crews are experienced and loyal is comforting when split second decisions must be made.

As I am sure all thinking Americans agree, we are a great Nation and without being chauvinistic or super nationalist, we are proud of our accomplishments; we are proud that we have a Country that after 200 years has proved that despite our differences we have maintained a record of progress and decency towards each other that continues to be the wonder of the world.

This has not been easy. And it has required many compromises. Even when our Constitution was being framed in Philadelphia in 1787 the essential element in the final drafting of that great document was compromise; and despite the differences between Jefferson and Hamilton the concept of an integrated Nation was accepted; a concept whereby States recognized the value of a Federal Government which would have the knowledge and the ability to act quickly and in the public interest on purely national matters.

And so in the oil business, within reason, the integration of a variety of economic forces, i.e., research—exploration—production—refining—transportation and marketing—are but the parts of an organic body. Integrated oil companies have operated competitively under the careful scrutiny of the Justice Department. In so doing they have provided a product and a service we all need in this mechanized world of ours.

In conclusion, my experience in bargaining with several of the major oil companies has convinced me that although there are similarities among them the differences are substantial. There is no monolithic approach wherein what was bargained with one company becomes an absolute for another company. Each agreement is different; each is tailormade to fit the needs and desires of each group. Surely there are similarities in wages, overtime, paid vacations and pensions—but for example, the Texaco officers would not be satisfied to have an Exxon agreement lock-stock and barrel; nor would the Exxon officers want the Mobil agreement. This is the virtue of being independent and also being able to identfy with a particular major oil company.

We all know that United States Senators are elected from industrial States—farm States—mountain States, etc. The needs and desires of your constituents vary both from State to State and within each State. It would seem to me that to fragment voters into specific economic, ethnic and religious and national origin groups, each entitled to their own political representatives would tear the Country apart.

In an imperfect world you gentlemen do the very best you can to keep this Nation together and at the same time listen carefully to the needs and desires of all your constituents. And while the analogy may not be exact, I believe there is some similarity with major integrated oil companies. If you consider a major integrated oil company as an economic asset and as a demonstrated "right arm" when National security is threatened, whatever faults these imperfect companies may have can be corrected without inviting the economic and national chaos which surely will follow the breakup of institutions which have grown organically and have taken generations to mature. Apart from the inequities in respect to pensions and other "special employee benefits" that will be eroded or disappear with any such dissolution of the companies, the consumer will face a world of economic unknowns.

With the increased costs resulting from many groups doing the same thing the consumer has to be the one who has to pay; there is no one else.

And what will our foreign friends and those not so friendly be doing while major American oil companies are being chopped up—picking up the pieces of course and thereby making the United States even more vulnerable than it now is to unilateral decisions by those over whom we have no control. It is too frightening to contemplate seriously.

Thank you very much for your patience and consideration.

Senator HRUSKA. Thank you for being here, Mr. Collins.

Dr. Measday, have you any questions of the witness?

Dr. MEASDAY. Just one question, Senator.

When you negotiate with Exxon, Mr. Collins, who do you negotiate with, the Transportation Department?

Mr. COLLINS. The Marine Transportation Department, sir.

Dr. MEASDAY. Right. The negotiations are handled by the Marine Transportation?

Mr. COLLINS. Yes, sir.

Dr. MEASDAY. All right. Just one more: Do your unions represent the foreign flags, too?

Mr. COLLINS. No, sir; only American-flag vessels.

Dr. MEASDAY. Thank you very much.

Mr. COLLINS. You're welcome, sir.

Senator HRUSKA. Thank you very much, Mr. Collins.

We are adjourned subject to the call of the chairman of the subcommittee, Senator Philip Hart.

[Whereupon, at 11:05 a.m., the proceedings were adjourned, subject to the call of the Chair.]

TEXACO
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WILLIAM K. TELL, JR.
VICE PRESIDENT

January 23, 1976

Honorable Philip A. Hart, Chairman
Subcommittee on Antitrust and Monopoly
Senate Judiciary Committee
United States Senate
Washington, D. C. 20510

Dear Senator Hart:

On November 19, 1975, Mr. Annon M. Card, Senior Vice President of Texaco Inc., testified before the Subcommittee on Antitrust and Monopoly. At that time it was agreed that Mr. Card would be permitted to submit for the record certain supplemental materials in support of his statement.

Such materials are enclosed herewith and it is respectfully requested that they be made a part of the record of the proceedings before the Subcommittee on Antitrust and Monopoly relating to vertical integration in the petroleum industry.

Very truly yours,

William K. Tell Jr.

Enc.
WKT:jk

VERTICAL INTEGRATION IN THE U.S. PETROLEUM INDUSTRY

Texaco respectfully submits the following statement to the Senate Subcommittee on Antitrust and Monopoly regarding vertical integration and proposals for divestiture in the petroleum industry.

Vertical integration, the linking of successive stages in the production and distribution of a particular product, is a common form of industrial organization in the United States. It has contributed substantially to economic growth by increasing productivity and efficient use of the nation's resources. Industries such as steel, aluminum, automobile manufacturing, wine and paper products, as well as petroleum, are vertically integrated.

--- Steel companies own and mine mineral deposits, transport iron ore, smelt it and sell products under their own brand names.

--- Aluminum companies mine bauxite, transport it, produce alumina from the ore, generate the power to produce the alumina, and manufacture and sell, in some cases under their own brand names, consumer, as well as industrial goods.

--- Automobile manufacturers design, tool, manufacture, and assemble, franchise dealerships under their own brand names, provide financing for purchase and manufacture spare parts.

--- Wine producers own vineyards, aging and storage facilities, and bottling plants, and retail under their own brand name.

--- Paper companies own timber supplies and mill and sell consumer and industrial products under their own names.

The degree of integration that a particular firm achieves in any industry is dependent upon the cost reduction and other benefits it will obtain from vertical integration. Vertical integration is a form of diversification, whereby a firm is able to reduce risks and achieve economies through investment in other functional levels. Because of the uncertainties of exploration and the large capital expenditures required for development and production, there are many joint producing and exploratory ventures in the petroleum industry, particularly among the smaller companies. Obviously these are natural ways to spread risk. Similarly, in other areas of operation, risks can be reduced by vertical integration. For example, investment in a large, efficient refinery would be riskier to undertake without a guarantee of long-term crude supplies.

<u>Integration Is Result of Industry Characteristics</u>

The petroleum industry contains integrated companies of all sizes. Of 131 refining companies listed in 1975, approximately 62 have chosen to integrate to some degree in the three levels of producing, refining, and marketing. These 62 companies account for 95 percent of refining capacity. Thus, it is clear that virtually all refining capacity is to some degree integrated into producing and marketing and that the benefits of integration are available to all size companies.

There are many sound economic reasons for the extent of vertical integration in the petroleum industry:

1. The physical characteristics of crude oil and products make storage and transportation difficult and expensive. Vertical integration permits efficiencies in day-to-day operations, particularly with respect to supply and distribution problems involving producing, refining, and marketing. Integrated companies, with their intimate knowledge of all phases of the industry, are well-equipped to coordinate production operations, refinery runs and yield patterns and inventories in order to maximize operating efficiencies.

2. The high degree of capital intensity at every level makes idle capacity very expensive and creates the need to operate close to full capacity at all functional levels. For example, the cost of constructing a new 200,000 BPD fuels refinery in the United States with full cracking facilities, which meets all ecological requirements, is now over $1 billion. Such a refinery when operated at full capacity can achieve considerable savings from economies of scale. Operating at less than full capacity dissipates the economic savings of large scale very rapidly. Integrated operations reduce the risk of running individual facilities at less than economic levels.

3. Vertical integration enables oil companies to coordinate capital investments in different segements of the petroleum industry. Investments in producing, refining, transportation and marketing facilities can be better balanced with one another, thereby maximizing capacity utilization and minimizing costs. The logistics of petroleum movements can also be enhanced by constructing new facilities in advantageous locations. Since each operating department has access to the company's overall requirements and plans, the possibility of unsound investment decisions is reduced.

4. In the absence of vertical integration, producing companies would have to sell to refining companies, which would, in turn, sell to marketing companies. Each non-integrated company would have to maintain sufficiently large purchasing organizations to buy from the previous stage of operation, and large sales organizations to sell to the succeeding level of operation. However, through vertical integration companies can eliminate much of these buying, selling and promotional costs since oil remains within the company moving operationally from one department to another. As a result, savings in cost are generated for the vertically integrated companies to pass on to consumers.

5. Vertical integration enhances a petroleum company's research and development capabilities. A major advantage is the ability to coordinate research efforts at all levels of operations to provide consumers with improved products at a minimum of time and cost. In a vertically integrated oil company, research is continually underway which will eventually benefit more than one functional level. For example, the development of a new product line or modification of an existing one could affect both refining and sales functions. If different companies were required to perform these operations, each would be required to conduct separate, uncoordinated and overlapping research and development programs. Research would be less effective, with longer lead times required to achieve results.

6. As members of one of the most capital-intensive industries in the world, oil companies invest billions of dollars every year to meet the growing demand for energy. Because of their efficiency and the lower risk attained through integration, vertically integrated companies of all sizes are in a much stronger position to generate and attract the large funds needed for this job than would be the less efficient firms that would result from divestiture.

The Degree of Integration in the Petroleum Industry

Although most firms in the industry are vertically integrated to some degree, their ability to supply all their needs at any particular functional level is far from complete. An indicator of the degree of integration into production for the domestic refiner is its crude self-sufficiency index. This index is the ratio of net crude production to operating-refining capacity.

For the latest year in which data are available (1973), the self-sufficiency index for the eight largest domestic refiners was slightly less than 50 percent. This means that the largest refiners were able to supply slightly less than one-half of their domestic refining requirements from their own domestic net crude production.

Another indication of incomplete integration is that many companies have inadequate refining capacity to meet their marketing needs and have to purchase products or arrange for processing of crude at other refineries. These processing arrangements are beneficial to the processor who is able to utilize its refining capacity at more efficient rates.

In regard to transportation facilities, most, if not all, companies have to rely to some extent on others to move products or crude to market. The Interstate Commerce Commission (ICC) requires interstate pipelines as common carriers to make space available on a pro-rata basis to all shippers.

Integration into marketing is also partial for most companies. The larger companies generally have relied heavily on independent businessmen to market their gasoline and other products. By contrast, many of the so-called "independent" companies retain complete control over their service stations by operating them on a salary basis.

Considering the above facts, the idea that companies generally run their operations as entirely closed systems is fallacious. Companies depend to varying extents on others for crude oil, for pipeline and tanker transportation, for additional refining capacity, and, especially in the case of the largest companies, for the marketing of their products.

Integration Transfers No Monopoly Power

Vertical integration by itself does not confer monopoly power on any company. For example, few enterprises are as vertically integrated as the farmer selling produce on the roadside, yet he has no monopoly or market power even though he controls production from the farm to the consumer.

Moreover, in any event, there is no monopoly or market power at any level in the petroleum industry to be allegedly transferred to another by vertical integration.

Production

There are more than 10,000 companies competing in oil and gas exploration and production. According to the Federal Trade Commission Staff's statistics, the level of

concentration in the production of crude oil is far below that of other mineral extraction industries, as well as the average for all U.S. manufacturing industries. The Staff's January 1974 report entitled "Trends in the Energy Sector of the U.S. Economy" showed that in 1970 (the most recent year for which data are reported), the net production of the four largest crude oil producers accounted for only 27.1 percent of domestic production, while the four-firm weighted concentration ratio for all manufacturing industries was 40.1 percent. Yet, as the Staff noted, "more relevantly" the concentration ratios in crude oil production "may be compared to other mineral extraction industries such as lead and zinc mining, iron ore mining, copper mining, sulfur mining and gold mining. These industries have substantially higher four-firm concentration ratios ranging from 47.0 to 79.9 percent." Hence, the Staff concluded that "crude oil production appears to be relatively unconcentrated."

Joint ventures have been a common form of organization in the bidding for and development of offshore oil properties. By sharing the extremely high risks of offshore exploration, the bidders have been able to decrease the risk borne by each company. Joint ventures reduce risks for both large and small companies by enabling them to diversify risks, rather than "putting all their eggs in one basket." This has

increased competition for leases and promoted the development of the offshore areas from which the United States will have to obtain much of its future oil production. Recently, the Department of the Interior has ruled that companies producing more than 1.6 million barrels per day of oil and gas would not be allowed to bid together. Such punitive rules will surely affect the development of the extremely risky offshore properties in the future.

In the recent statement of Dr. Walter S. Measday before the Senate Antiturst and Monopoly Subcommittee, he attempted to show that the oil industry is withholding production from OCS properties. Unfortunately, Dr. Measday apparently misunderstood the terms Maximum Efficient Rate (MER) and Maximum Production Rate (MPR), neglected the different filing procedures employed by the U.S. Geological Survey, and ignored other factors which affect production. Exhibit A, attached, provides an analysis of Dr. Measday's study. As our analysis explains, Texaco has continuously striven to maximize production and has not withheld production.

Transportation

The economies of scale inherent in petroleum pipelines, and the huge investment and enormous risk needed to achieve such economies, frequently mandate joint ownership. The huge investment required for even a small, single-owner pipeline can be prohibitive; yet with a number of partners, the cost of a much larger pipeline will be significantly less for each individual owner. Naturally, this also lowers the risk in such a large capital outlay. Such large scale pipelines reduce transportation costs and consequently increase competition in the geographic regions they serve.

Pipeline ownership is dispersed among many companies. The vast majority of pipelines are common carriers regulated by the ICC to insure that they are available to all on a non-discriminatory basis. There is also substantial competition from other means of transportation - tankers, barges and railcars - to insure that all shippers receive fair and non-discriminatory treatment.

There are about 100 interstate pipeline companies engaged in the transportation of crude oil and products. The

top four pipeline companies account for only about 23 percent of total volume moved by interstate pipeline companies, and the top eight pipeline companies for about 41 percent of total volume.

In addition to this low level of concentration, the common carrier status of interstate pipelines requires that the pipeline's tariffs be just and reasonable, that they be filed with the ICC before transportation of products under that tariff begins, and that they be applicable to all shippers on a non-discriminatory basis. In addition, the pipeline must furnish transportation upon reasonable request to any shippers and must establish reasonable rates including joint rates with all connecting common carrier pipelines.

In February 1973, the ICC Chairman George M. Stafford informed the House Subcommittee on Small Business Problems that the ICC historically had received "very few complaints with respect to alleged discriminatory rates and practices of pipelines." Chairman Stafford stated:

> "... (T)here is no evidence that the past of present practices of joint venture pipelines have discriminated against independent shippers."

Although ICC regulations require that all shippers be treated as equals, non-owner shippers are, so to speak, more equal than owner shippers. While all shippers are guaranteed access to pipeline transportation, it is the owners who enter into throughput agreements, who bear the huge risks inherent in the construction and operation of the pipeline and who pay the same rates to ship over the lines as non-owners. For example, Explorer Pipeline has found that it cannot maintain optimal throughput. In this case, it is those who have guaranteed that the pipeline will pay its debts - the owners - who must bear the burden imposed by changed circumstances.

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Refining

There are 131 competing companies that operate 261 refineries and no one company has more than 9 percent of the nation's refining capacity. Since 1950 there have been a number of new entrants in refining. Some of these new entrants have grown rapidly to substantial size. Among these are American Petrofina (200,000 BPD), Amerada Hess (728,000 BPD), Coastal States Refining Co. (212,982 BPD), and Koch Industries (109,800 BPD). In addition to these large new refiners, there have been many smaller entrants.

The rapid growth of the new entrants along with that of the so-called "independents" has caused the already low concentration in refining to fall even lower.

Shares of U.S. Refining Capacity (Including Puerto Rico) Accounted For by Four Largest Firms

1970*	32.84%
1971	32.54
1972	32.18
1973	31.87
1974	31.17
1975	30.58

*January 1st

As indicated in this table, concentration in refining has been well below the 40.1 percent four-firm average for all United States manufacturing (1970).

The most recent data prepared by the Bureau of Mines show that, in the period 1970-1975, "independents" increased their refining capacity by 45.7 percent, while the so-called "majors," the twenty largest companies, have increased their capacity by only 19.6 percent. Based on presently available data, the growth of the "independents" should continue to outdistance that of the larger companies. The June 1975 Federal Energy Administration report on "Trends in Refining Capacity and Utilization" listed "firm" planned new refineries, expansions and reactivations from 1975 through 1979, and showed projected increased capacities of "independents" versus the so-called "majors" as follows:

	"Majors"		"Independents"	
	000 BPD	% of Total	000 BPD	% of Total
1975	156.6	41%	288.8	59%
1976	531.0	51	502.7	49
1977	250.0	54	215.0	46
1978	200.0	33	400.0	67
1979	--	--	450.0	100

In sum, the long-range outlook for the "independent" sector is secure.

Marketing

The marketing phase of the industry is and will be increasingly competitive. Indeed, there are more than 15,000 wholesalers of petroleum products and more than 300,000 gasoline retailers in the country. Further, the August 27, 1973 Staff Analysis of the Office of the Energy Administrator, Department of the Treasury, confirmed the conclusions of most industry observers that "the independents' position in the market has strengthened at the expense of the majors." In 1967, the "independents" selling unbranded or private brand gasoline sold 19 percent of the nation's gasoline. This figure has gone up steadily--to 28 percent in 1972, 29 percent in 1973, and over 30 percent in 1974.

Profits

A primary indicator of monopoly or even market power is excessive profit over the long-term. The rate of return on net worth, as reported by First National City Bank, for the period 1965-1974 was 13.1 percent for the petroleum industry, while for all manufacturing, it was 13.0 percent. According to data based on studies by the American Petroleum Institute, the rate of return on net worth of the nation's 25 leading oil companies

during January-September 1975 averaged only 12.5 percent. Considering the risk, the rate of return in the petroleum industry is inadequate.

The facts, as outlined above, clearly support the position that concentration at any level of petroleum operations is low, and that there has been rapid growth of the so-called "independents."

Changed Circumstances in the Industry Have Removed the Basis For Past Criticisms

In the last few years, many of the factors which led earlier critics such as the Federal Trade Commission to criticize the competitiveness of the industry no longer exist. Allegations that the "major" oil companies had the power to control the price of crude oil have been superseded by the dominance of the Organization of Petroleum Exporting Countries (OPEC), which has gained complete control over international oil prices. Likewise, allegations that the "majors" had been able to prevent the inflow of foreign oil to the United States have been made irrelevant by the elimination of the Mandatory Oil Import Control Program. It

had been alleged that the "major" oil companies had an incentive, through the depletion allowance, to shift profits from other operating levels into crude production, resulting in a squeeze on the "independent" refiners. Effective January 1, 1975, the depletion allowance, which in reality served as an economic incentive for the discovery and development of petroleum reserves, was eliminated for all but the smallest, non-integrated domestic oil producers. Even the Federal Trade Commission Staff acknowledges that this squeeze hypothesis "no longer exists." Also, it had been alleged that oil companies had taken advantage of state prorationing to keep crude oil off the market. But this allegation is a fiction since state production "allowables" have been at maximum levels for many years. In sum, important changes in the structure of the industry in recent years completely undercut the old arguments that the industry is noncompetitive.

Effects of Divestiture

In these times when huge capital investments are needed to insure the country's future energy requirements, divestiture would have an adverse impact on the borrowing capabilities of the industry. The non-integrated companies based entirely in one area

of the industry resulting from divestiture would instantly have their risks increased. Many investments that were made when a company was integrated would be too risky for the fragmented companies to undertake when operations are confined by law to only one area of the industry and cannot be spread out over other integrated investments.

The borrowing abilities of these companies would be eroded due to the higher risks they would be assuming. For example, it is doubtful that funds previously available for an integrated refiner's capacity expansion program would be available at similar costs to a large refiner having no guarantees of crude supply or product marketability. Divestiture would raise the capital and operating costs for the vast majority of firms in the industry.

Millions of stockholders would be adversely affected by divestiture. A study sponsored by the American Petroleum Institute entitled, "Shareholders of the Six Largest U.S. Oil Companies" showed that 46 percent of the stockholders in these companies were retired. The firms were 90 percent owned, directly and indirectly, by 14 million people. The median estimated value of all common stock holding was $25,000; 44.7 percent of the direct shareholders had annual incomes of

under $15,000, with the median income of all direct shareholders at $16,418; and 91 colleges and universities were stockholders. Divestiture would cause the value of the investments of these and other stockholders to fall. The companies that would be split off from the integrated companies would be economically less viable and there would be an increase in the risk element in the portfolios held by these stockholders.

The costs and difficulties of mechanically accomplishing divestiture would also add to the inadvisability of divestiture. The integrated company acts as one unit since its operations are melded together. Thus, for all practical purposes, in the event of divestiture, it would be virtually impossible to fairly allocate the assets and debts to each of the new firms created.

Divestiture would also affect the relationship of American companies with foreign sources of crude oil and create greater uncertainty at a time when stability of supply is essential. The cartel power of OPEC would be substantially strengthened by breaking up the private companies which are now large purchasers of their oil. Foreign competitors would still be able to benefit from the economies of integration and scale, giving them a competitive advantage over their U.S. counterparts.

Divestiture would make it impossible to achieve the goals of Project Independence. By increasing the risks and decreasing the efficiency of the companies involved in exploration, divestiture would curtail the flow of investment into this area and thus diminish rather than enhance the supply of crude oil and natural gas.

The integrated nature of the oil industry has helped the nation to maintain vital petroleum supplies in times of emergency because of its ability to respond rapidly as a result of its coordination at all levels of operation. However, if the industry were fragmented into many small non-integrated units, this efficient coordination would be eliminated, and it would be much more difficult for government to mobilize industry response.

There is no relationship between the problems presented by the current attempt at divestiture and the divestiture ordered in the 1911 Standard Oil Case. The *Standard Oil* divestiture did not fragment operating companies. In *Standard Oil*, the courts ordered that the Standard holding company be dissolved, with its controlling shares in 33 geographically dispersed operating subsidiaries to be distributed on a pro-rata basis to the stockholders of Standard Oil of New Jersey. The geographical dispersion of

these subsidiaries did not mean that the resulting companies were not vertically integrated. For example, Standard Oil of California continued to be a fully integrated company after the dissolution. It must be remembered that the Standard Oil Trust was a holding company, allowing its subsidiaries to maintain their own identities. This is not the case with today's integrated oil companies. These companies function as integrated units and do not maintain the operational integrity of their functional units.

* * * * * * *

In these times when America needs to expand all of its productive facilities, policies that would intentionally disrupt the capital and exploratory expenditures of an industry as important as petroleum would prove disastrous. The U.S. economy needs to grow. This cannot be achieved through negative actions, but requires the establishment of a positive atmosphere in which innovation and expansion can be carried forward with some confidence.

The American petroleum industry through intense competition at every level has been and is now serving the American consumer extremely well. Proponents of a radical restructuring of the U.S. petroleum industry cannot carry the heavy burden of demonstrating that their alternative model would provide more efficiencies and productivity than the vertically integrated structure which exists today.

EXHIBIT A

Dr. Walter S. Measday, Chief Economist of the Senate Antitrust and Monopoly Subcommittee, appeared before the Subcommittee on September 23, 1975. In his statement ("Measday Statement") he concluded that Louisiana Outer Continental Shelf ("OCS") leases could produce crude oil at rates higher than currently being achieved and that production possibly is being held back. Texaco submits that the methods used by Measday and the resulting conclusions are erroneous. Texaco has not withheld production on OCS leases. Texaco has produced, and will continue to produce at maximum achievable rates in accordance with the regulations of the United States Geological Survey.

Principally, the Measday Statement suffers from (a) an apparent misunderstanding of the concepts of Maximum Efficient Rate ("MER") for reservoir production and Maximum Production Rate ("MPR") for well production and (b) a failure to give proper recognition to certain physical constraints which limit production capacity. In particular, the Measday Statement fails to recognize that both the actual MER and the actual MPR change constantly because reservoir conditions and pressures constantly change. The consequence is an invalid statistical comparison and the resulting erroneous conclusions.

The actual MER is the instantaneous maximum producing rate, usually expressed as a daily rate, that can be sustained for a reservoir without adverse effects on performance or ultimate

recovery. Production in excess of this rate might, for example cause irreparable damage to well bores or be harmful to the ultimate recovery of fluids from the producing reservoir.

A proper test of whether or not there has been any "holding back" on production would require the determination of what the changing MER was for every day during the year and a determination of the effect that physical constraints, such as necessary downtime for bad weather or required maintenance, had on production capability during the year. Then annual production could be validly compared with actual physical production capability during the year. However, the Measday Statement does not attempt to determine what the actual MER was for the periods it considers,* nor does it attempt to determine the effect of physical constraints on production capability.

Instead, the Measday Statement wholly ignores physical constraints and further incorrectly assumes that the MER estimates which producers must file once annually with the USGS ["MER(USGS) estimates"] are the actual rates of production which can be achieved throughout the entire year for the respective reservoirs. In point of fact, the MER (USGS) estimate will almost always predictably exceed the actual achievable annual rate of production for a reservoir. Nevertheless, acting on the erroneous assumption

*Because of the expense and effort involved in determining MER's it would not be feasible to determine each change in actual MER's.

that the MER (USGS) estimates can be achieved at every hour during a year and using the MER (USGS) rates to calculate hypothetical annual production figures, the Measday Statement arrives at figures which are some 50% higher than the real annual production for 1974 and the first 6 months of 1975. And it thus erroneously concludes that the discrepancy between its calculated production figures and real production represents a shortfall from achievable production.

The Measday Statement's fallacy is apparent from consideration of the geological facts relating to MER's and the preparation of MER (USGS) estimates. The actual MER is constantly fluctuating because the instantaneous oil or gas withdrawal rate from a reservoir which will permit economic development and depletion of that reservoir without detriment to ultimate recovery constantly changes. Although the rate of change of MER is a function peculiar to each producing reservoir, a general pattern is that the MER reaches a peak at between one-tenth and one-third of the ultimate production and thereafter declines continuously from the peak until depletion. Highly unique reservoirs fall outside this general range in terms of the time in producing life at which the MER peaks.

The actual MER's which will hold true for a reservoir at different times during a year cannot be known in advance. The preparation of the MER (USGS) estimate in accordance with USGS regulations attempts to take into account the fact that the actual MER for a reservoir will fluctuate during the ensuing year. The MER (USGS) estimate attempts to predict what will be the highest maximum producing rate that can be achieved without damage at any time during the ensuing year. Thus, the MER (USGS) estimate is not a rate which is achievable without damage over a lengthy period of time. Nor is it an average of the maximum achievable rates that are expected to hold true at different times during the ensuing year. Rather, it represents an estimate of the highest actual MER that will exist at any time during the year. Therefore, except in unusual circumstances, the MER (USGS) estimate will necessarily be greater than the actual MER's in effect during a year. Consequently, the Measday Statement's use of the MER (USGS) estimate as the equivalent of the actual MER's in effect during a year gives a substantial upward bias to its calculations of achievable production during a year.

The Measday Statement likewise takes a similar mistaken view as to the nature of MPR estimates, which producers

file with USGS on a quarterly basis ["MPR (USGS) estimates"]. The Measday Statement calculates hypothetical annual production figures for 1974 and the first 6 months of 1975 by assuming that all wells produce at the MPR (USGS) estimate at every hour during each quarter and arrives at figures which are 20% to 30% higher than actual production. Its assumption is that the MPR (USGS) estimate is identical to the actual maximum achievable rate of production for a well.* However, it is not.

For the same reasons that MER changes are a function of geological and reservoir conditions, the maximum rate at which an individual well can produce without adverse effects on performance also changes constantly. Therefore, the actual maximum achievable rates of production for a well cannot be known in advance. The MPR (USGS) estimates are determined so as to be equal to the highest maximum achievable rate of production that is anticipated at any time during the quarter. Thus, although MPR (USGS) estimates are based on the results of actual past production tests, the estimates are set higher

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*That the Measday Statement completely misunderstands the nature of the MPR is further revealed on page 8 where it states:

> "In other words, MPR is simply the top production limit of the equipment on an individual well."

This is erroneous. The MPR is related not only to the equipment in the individual well, but also to the geological reservoir conditions encountered by the well.

than the anticipated achievable production rates. This is done in order to allow for varying production characteristics on a daily basis. Current practice by the USGS is to assign an MPR for an individual well at 110% of the maximum test rate unless additional supporting information justifies a higher assignment. As a result, the totals of the quarterly MPR (USGS) estimates for wells in each reservoir are typically at least about 10% above the past actual achievable producing capacity, exclusive of physical constraints such as shutdown time because of weather, maintenance, safety and inspections by the USGS, all of which are disregarded in the Measday Statement.

Further, if the individual well capacity (MPR) declines during a quarter, the MPR (USGS) estimate approved at the beginning of the quarter will be larger than the achievable well rate later in the quarter. On this point it is significant to recognize that most major OCS fields for the period analyzed by the Measday Statement were past the flush production period so that the actual MPR's (and also MER's) were declining in these fields and thus were lower during each quarter than the USGS estimates therefor based on previous historical production. For these reasons, the Measday Statement's use of the MPR (USGS) estimate as the

equivalent of actual production capability during a year gives a substantial upward bias to its alternative calculation of achievable production during a year.

So also, the Measday Statement misconstrues the relationship between the MPR (USGS) quarterly estimates and the MER (USGS) annual estimates. Out of an apparent desire to reject the MPR as having any realistic relationship to producing capacity, Measday asserts that because MPR is closely tied to production experience it is suspect and conveniently chooses the MER (USGS) estimates, which produce a larger discrepancy, as his preferred standard. In actuality, the MPR (USGS) estimate is more nearly related to actual maximum producing capability than is any MER (USGS) estimate. This follows from the fact that MPR estimates are adjusted quarterly so that these estimates more closely reflect the constantly changing producing capability.

What is more, it is particularly fallacious to reject the MPR (USGS) estimates in favor of the MER (USGS) estimates since the latter, when made, are in part the sum of the individual well MPR's for respective reservoirs with adjustments for reservoir conditions plus allowances for new wells and workovers planned for the reservoirs. Indeed, if anything,

the sum of the MPR's in a reservoir will reflect more closely changes in reservoir conditions and changing capacity as new wells are drilled because the MPR's are prepared on a more frequent basis.

Texaco's practice in submitting its annual MER estimates to USGS for approval is illustrative of the procedures used in determining MER (USGS) estimates. For each oil and gas reservoir under federal jurisdiction, Texaco is required to submit to the USGS Area Oil and Gas Supervisor for Production Control a request for a Reservoir Maximum Efficient Rate (MER Form 91866) on an annual basis. This request is based mainly on test data obtained from the well or wells producing from the reservoir. Other contributing factors to a request for a reservoir MER are the analysis of the cores taken from the reservoir, increased geological understanding of the reservoir obtained by drilling and an analysis of the reservoir fluids and their volumetric behavoir under reservoir temperature and pressure conditions (known as PVT analysis). Texaco's reservoir engineering section evaluates these factors and combines them with the test data, then allows an additional 10% for normal fluctuations. OCS Order No. 11 of the USGS does not permit the reservoir withdrawal rate to exceed the approved

MER. Consequently if normal fluctuations result in production in excess of the approved MER, production must be reduced during the following month to balance the over production. Therefore, Texaco seeks to maintain at least a 10% tolerance for the MER above the sum of MPR's in every reservoir in order to avoid the production curtailment which might be required if there were an unanticipated improvement in producing capabilities. In addition to the 10% allowance for normal fluctuations, an additional allowance is also made for new wells and workovers planned for the reservoir. The compilation of all these factors and data is submitted to the USGS to obtain a MER for the reservoir.

In addition to its conceptual misunderstandings regarding the MER's and MPR's, the Measday Statement does not take into account the fact that the MER figures which it used as applicable for the entire period were later revised. The first USGS annual review of estimated MER's showed that the MER totals on properties operated by Texaco declined by about 40% compared to the published MER list in effect on July 1, 1975. This decline was due to diminishing production capacity in some fields, slower development in some fields because of dry holes, less than originally hoped-for peak production capability in other fields and a variety of production problems. All these factors contributing to the MER decline out-

weighed increases that may have been realized by additional development and/or workovers.

Finally, the Measday Statement refuses to analyze the effect of physical factors which it acknowledges reduce production capability over the course of a year. Instead, it arbitrarily rejects each of these factors on the lame pretext that ostensibly no one factor is sufficient to account for the difference between the MER derived production figures and actual production. Indeed, this proposition is undercut by the Measday Statement itself which acknowledges "most wells normally are idle for maintenance or badweather several days each month." This fact alone can account for a substantial difference between actual maximum production capability and a calculation of production figures based on the MER (USGS) estimate such as the Measday Statement presents, particularly when Measday assumes that each well produces at the MER (USGS) capacity every hour of the year.

Moreover, there are still other reasons, apart from maintenance and weather, which account for wells being kept idle for a period during the year. For example, the Gulf of Mexico safety precautions dictate that producing wells be shut in when drilling is conducted or remedial activity taken as to

other wells on the same platform. Production curtailment for safety is particularly critical on major new discoveries where development drilling is still underway. Production capability cannot be determined without considering such factors.

Texaco has always insisted in both its own operations and in joint interest operations by others that production be maximized at the earliest possible time. Texaco has also insisted that maximum production be maintained at all times with the only restraints being those that are beyond the control of the company or those that would jeopardize the safety of persons, the environment, or equipment or cause the loss of resources. The economics associated with the enormous capital investment and the ongoing operating expenses dictate that maximum production be achieved at the earliest possible date.

In conclusion, Texaco has always striven to produce at the maximum achievable rate and will continue to comport itself under the USGS regulations which govern offshore operations.

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J. P. Hammond
Vice President
Public and Government Affairs

February 13, 1976

The Hon. Philip A. Hart
Chairman
Subcommittee on Anti-Trust and Monopoly
United States Senate
253 Russell Building
Washington, D.C. 20510

Dear Senator Hart:

Because the size of petroleum company profit in relation to product sales is so often misunderstood, I would like to call your attention to some data compiled by Chase Manhattan Bank and published in their 1974 report entitled "Financial Analysis of a Group of Petroleum Companies."

U.S. sales data for these companies for 1974 include 5,314 million barrels of refined product sales, plus natural gas sales of the equivalent of 2,085 million barrels. Total U.S. earnings for the 29 companies in 1974 were $6,041 million. This would indicate average earnings of only <u>2.1 cents per gallon</u> on refined product plus natural gas equivalent sales.

I believe this information would be useful to your committee in evaluating proposed legislation, and I would appreciate your including this letter as a part of the record of hearings on Senate Bill 2387 and other related bills on the subject of vertical integration in the petroleum industry.

Sincerely,

JPHammond

Editor's note.--The above letter was also received by Senator James O. Eastland, Chairman, Committee on the Judiciary.

THE 1911 STANDARD OIL BREAKUP: ITS RELEVANCE TODAY

PREPARED BY STAFF OF THE
AMERICAN PETROLEUM INSTITUTE
JANUARY 30, 1976

SUBMITTED BY FRANK N. IKARD, PRESIDENT

Introduction

The current interest in governmental action to dismember the large American oil companies into smaller units is the latest expression of a political idea that began about a century ago. In the 1870s, as the Standard Oil Company began to achieve dominance in the American petroleum industry, the idea also grew that the federal government should limit the size and/or scope of any individual oil company. Because in 1911 the Supreme Court ordered the dismemberment of Standard Oil Company of New Jersey, those who favor divestiture have a precedent in both political and economic history. The movement to break up "Big Oil" gains popularity periodically, a form of radical nostalgia that seems especially popular during periods of economic recession.

The purpose of this paper is to compare the conditions in the oil industry leading up to and immediately following the break up of the Standard Oil Company in 1911 with conditions prevailing today to see if that action is a valid precedent for contemporary policy.

The early history of the petroleum industry in general and the Standard Oil Company in particular is briefly discussed in order to put the 1911 divestiture into historical perspective. This historical background should be useful to the reader in

evaluating the origins of the divestiture idea, and the general conditions which helped spawn that idea.

By comparing the degree of concentration of the oil industry in production, refining, transportation and marketing in the predivestiture period with today, it is possible to determine whether the problem for which divestiture was deemed an appropriate remedy does indeed exist today. The period following the breakup of the companies in 1911 is also looked at in terms of whether similar results could be obtained today.

This paper concludes that the Standard Oil divestiture is not an appropriate precedent for conditions in the industry today. The dominance of the petroleum industry by the Standard Oil Company, which was the reason for the divestiture movement early in this century, is not reflected in conditions today. Whether we are talking about concentration ratios or profit rates or patterns of ownership, the contrast in conditions between 1911 and today are marked. The similarities are few. It is also clear that the economic and political factors that encouraged the growth and prosperity of oil companies after 1911 are not reflected in this time of energy crisis.

While nostalgia for less complicated times with relatively simple solutions to social and economic problems may be understandable, discussion of an appropriate energy policy today should center on appropriate action to achieve certain goals. Yesterday's solutions will not solve today's problems.

I. The Early History of the Oil Industry

While oil had been used for medicinal and miscellaneous purposes prior to the drilling of the first well by Colonel Drake in 1859, its uses were strictly limited because it could not be attained in large quantities. But the uses of even limited amounts were well known, and in 1855 Professor Silliman at Yale had published a study showing the feasibility of refining illuminants, lubricants, gas and parafins from petroleum.[1] After oil was first discovered in quantity, the growth of the oil industry was meteoric.

It has been said -- accurately -- that oil had just been discovered when Lincoln was nominated for President in 1860 and that virtually the entire civilized world depended on it by the time Lincoln was assassinated in 1865.

The industry's first few years were marked by successful solutions of one seemingly insurmountable obstacle after another in rapid succession. Once oil had been found and a method devised to get it out of the ground, the most immediate problem was transporting it to refineries.

One very early answer was the construction of pipelines. The early pipelines were often dug up and destroyed by teamsters who correctly perceived the effect on their own business. However, the first successful one was built in 1865 and was five miles long.[2]

These early pipelines carried the crude oil to the river port to be shipped East, to local refineries, or to railroad terminals.

Soon rail transport came to be relied on almost exclusively, with pipelines connecting the oil fields to the railroad heads. This development reduced the costs of transporting crude oil dramatically. And while rail transportation was later supplanted by long distance pipelines, the railroads played a key role in the development of the oil industry and how it was organized.[3]

II. John D. Rockefeller

The man who later came to dominate the oil industry and became a symbol for both the sins and the virtues of capitalism began his career in the wholesale produce business.

After an early business trip to the Oil Regions in 1862, John D. Rockefeller went into the refining business with several partners.

January 10, 1870, John D. Rockefeller, his brother William, and three other partners formed The Standard Oil Company. The company was capitalized at $1,000,000, and John D. Rockefeller was elected the first President.[4]

III. The Rebate and the Standard Monopoly

Rebates -- or kickbacks of a percentage of the standard price to preferred customers -- were a common business practice during this era. Many observers, especially Rockefeller's contemporary critics and competitors, believed that Rockefeller's negotiation of a lower transport fee was the chief method by which he came to dominate the oil industry. The railroads, chiefly the Erie and the New York Central, justified the practice by the economies of scale achieved when a shipper could guarantee a minimum shipment of large volume. Nevertheless, the practice clearly discriminated in favor of the large user who was thus able to bring his product to the market at significantly less cost than his competitors.

Whether it was the rebate, other factors, or some combination thereof, by the early '70s Rockefeller's Standard Oil owned virtually every refinery in Cleveland which became the leading refining city.[5] And by the end of the decade, Pittsburgh, Philadelphia, New York and the Oil Regions came under Standard's domination as well.[6]

IV. Construction of the Standard Oil Trust

Rockefeller and his able associates continued to buy other companies -- either for cash or exchange for stock in Standard Oil.

In 1879 the stocks of the various companies held by Standard were transferred to a small group of trustees. This was the first time a trust agreement was used for such purposes[7] and gave the name "trust" its popular business usage.

In 1892, the Supreme Court of Ohio declared the trust illegal and for a period of about seven years, the various Standard companies were held together by little more than the common interest of the stockholders rather than a formalized structure. In 1899, the company reorganized under the laws of the State of New Jersey and became the Standard Oil Company (N.J.).[8]

V. The Political Climate

The political climate in which Standard operated had been growing steadily more hostile since the decade of the '70s. The tremendous economic growth of the second half of the 19th century-- capitalization per business establishment multiplied eight times between 1850 and 1880 -- created tensions that were reflected in the politics of the day. Henry Demarest Lloyd wrote Wealth Against Commonwealth, which was published in 1894.

Ida Tarbells' famous The History of The Standard Oil Company was first serialized in McClure's Magazine, and published in book form in 1904. Theodore Roosevelt was making his reputation as a "trustbuster" and the Democrats were equally vehement in denouncing "these commercial monsters called trusts."[9]

In 1890, the Sherman Antitrust Act was passed. Passage of the Clayton Act followed.

In 1906, the government filed suit under the Sherman Act, charging Standard with conspiring "to restrain the trade and commerce in petroleum, commonly called 'crude oil,' in refined oil, and in the other products of petroleum." Based on the Bureau of Corporations report on Standard Oil, the thrust of the charge was that Standard had established a monopoly in refining through its position in transportation.

In the meantime, various other trials involving Standard were going on simultaneously. Between 1904 and 1906, over 23 suits were filed by state governments against Standard.[10]

VI. Comparison With Today

The break-up of Standard Oil in 1911 is often cited as a precedent for requiring vertical disintegration of oil companies today. The fact is that the competitive structure of the oil industry today is entirely different from what it was in the years preceding the dissolution of the Standard Oil Company. The contrast between Table A and Table B demonstrates

TABLE B

Market Concentration in the U.S. Oil Industry

	Top 1	Top 4	Top 8
Net Crude and NGL Production (1974)[1]	8.5	26.0	42.1
Refining Capacity (1974)[2]	7.8	28.6	51.0
Interstate Petroleum Pipelines, by volume (1972)[3]	10.1	33.8	57.9
Non-Communist International Tanker Market (1972)[4]	5.0	14.3	17.5
Gasoline Marketing (1974)[5]	8.1	29.8	51.8
All U.S. Mfg. Average	-	40.1[6]	60[7]

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1 Source: Company annual reports, total from U.S. Bureau of Mines, Petroleum Statement, December Issue.

2 Source: "U.S. Refining Capacity," National Petroleum Refineries Association, December 1, 1974.

3 Source: U.S. ICC "Transport Statistics in the U.S.," Part 6, Oil Pipelines, 1972; Pipeline company annual reports to ICC, Form P, 1972.

4 Source: Neil H. Jacoby, Multinational Oil, MacMillan Publishing Co., 1974, Table 9.10, p. 202. The figures here given pertain only to the top U.S. firms.

5 Source: Lundberg Survey, Inc., copyright by Dan Lundberg, 1975. Reprinted in National Petroleum News, mid-May issue, 1975, p. 99.

6 Source: U.S. Department of Commerce, Bureau of the Census, Annual Survey of Manufactures, 1970, Value of Shipment Concentration Ratios, M 70(AS)-9 (Washington, D.C.: Government Printing Office, 1972).

7 Source: Submission of Exxon Co., U.S.A. before the Senate Judiciary Subcommittee on Antitrust and Monopoly, January 21, 1975, p. 5.

TABLE A

Summary of Standard Oil's Position in the American Petroleum Industry: 1880-1911

Per cent of control over crude oil supplies

Fields	1880	1899	1906	1911
Appalachian	92	88	72	78
Lima-Indiana		85	95	90
Gulf Coast			10	10
Mid-Continent			45	44
Illinois			100	83
California			29	29

Per cent of control over refinery capacity

	1880	1899	1906	1911
Share of rated daily crude capacity	90-95	82	70	64

Per cent of major products sold

	1880	1899	1906-1911
Kerosene	90-95	85	75
Lubes		40	55
Waxes		50	67
Fuel oil		85	31
Gasoline		85	66

Source: Williamson and Andreano, "Competitive Structure of the Petroleum Industry," Oil's First Century, 73.

clearly that Standard Oil's imposing dominance of the petroleum industry prior to 1911 has no present day parallel.

Production

- Standard's control over crude supplies ranged from 92% in 1880 to 70% to 80% of older fields and 10% to 30% of newer fields in the West in 1911. Standard Oil did not actually dominate production of crude oil; rather, because of its purchasing power, and its dominant position in pipelines, it was able to set the price of the crude oil it purchased.[11]

- Today, the largest producer of crude oil produces just 8.5% of the total. And neither the Top 4 companies (26%) nor the Top 8 companies (42.1%) can match Standard's pre-1911 position.

Refining

- Standard's share of refining capacity ranged from 90% to 95% in 1880 to 64% in 1911.

- By comparison, the top refiner today accounts for only 7.8% of capacity. The Top 4, 28.6%; the Top 8, 51.0%.

Transportation

- Standard Oil had almost a total monopoly over pipeline transportation. Through its relationships first with railroads and then with pipelines, Standard was able to transport crude oil at a lower cost than its competitors.[12]

- The top company in pipeline ownership by volume has only 10.1% of interstate pipelines. The Top 4, 33.8%; the Top 8, 57.9%. And tankers are even less concentrated.

Marketing

- At the peak of its domination, Standard sold 90% to 95% of kerosene sold in 1880. By 1911, Standard still sold 75% of the kerosene, and 66% of a relatively minor product called gasoline.

- In the gasoline market today, the top company accounts for 8.1%. The Top 4 sell 29.8%; the Top 8, 51.8%.

Ownership

- In 1900, John D. Rockefeller owned 42.9% of Standard

- In contrast, today the shares of just the six largest oil

Ownership

Oil of New Jersey. Fifteen other individual stockholders accounted for an additional 39.5%. This meant that over 80% of the company which virtually dominated the petroleum industry was owned by only 16 individuals.[13] In 1911, ten men still owned 37.7% of Standard's stock, with 24.9% held by Rockefeller. At the time of its dissolution, all of the stock of the Standard Oil Company was held by only 6,000 stockholders.[14]

companies are owned by 2½ million direct shareowners and another 11½ million indirect owners. In other words, 14 million Americans, or about 6.5% of the population, are shareowners of just the six largest companies compared to 6,000, or only about 1/10,000 of one percent of the population in 1911.

Profits

o Economic historians have indicated that Standard Oil's profit rates were twice that of profit rates in general during the

o During the first half of 1975, the 25 leading oil companies had a comparable profit rate of 11.9% -- about half the Standard rates during the

Profits

years leading to up 1911. Standard's profit as a percentage of net worth was 23.1% in 1906; 20.7% in 1904; 27.0% in 1902; 27% in 1900.[15]

decade prior to the break-up. For the ten years 1965-1974, the average profit as a percentage of net worth of petroleum companies was 13.4%. The ten year average for all mining was 14.7%; for all manufacturing, 13.0%.[16]

VII. The Break-up of The Standard Oil Company (N.J.)

On May 15, 1911 the Supreme Court handed down its decision that the Standard Oil Company of New Jersey constituted a monopoly in restraint of trade. The Court decreed that the Sherman Act outlawed unreasonable monopoly and that the Standard organization was an unreasonable monopoly. The Justices concluded further that the Standard Oil Company intended to establish a monopoly and "to drive others from the field and exclude them from their right to trade."

Standard Oil was given six months to accomplish the divorcement of 33 companies. The stocks of the various soon-to-be-separate companies had to be distributed on a pro rata basis to the 6,000 shareholders of Standard Oil. Standard Oil lost 57 percent of its net value and 91 percent of its annual earning power.[17]

VIII. The Effect of the Break-up on the Standard Companies

The effect of the dissolution on the Standard organization was immediate. John D. Rockefeller resigned as nominal president of Standard of New Jersey. William Rockefeller and his son, William G. Rockefeller, also stepped down from their positions in the company.[18]

The dissolution into separate organizations was accomplished with little difficulty, as the various companies were already operating with their own management.[19] It was also thought that Standard's management had raised the capitalization of its subsidiaries to facilitate divestiture.[20]

While the technical task of creating a number of companies out of one was easily accomplished, the goal of creating viable companies capable of competing effectively in the oil industry required years to effect.

Thus, during the era following the 1911 case, many of the Standard Companies integrated forward to handle surpluses and integrated backward to handle shortages. Vertical integration was the method by which many "Standard" and "independent" companies achieved economic success during the period between the World Wars.[21]

While there was a period following the dissolution in which the old Standard Companies, almost as if by gentlemen's agreement, appeared to be less than rigorous in their competition with each other, this period did not last.[22]

Today there is no precise dividing line between integrated and non-integrated companies. It is more realistic to view oil companies on a continuum with those on one end almost totally integrated and those on the other performing only a single function.[23]

IX. How Did the Shareowners Fare?

For some, the motive behind dissolution of Standard Oil had been a desire to see a truly competitive situation in the petroleum industry. Many businessmen, particularly independent oil men, were among those who saw the destruction of the Standard Trust as a positive development for the nation. For some, however, the main concern was that the concentration of wealth and power in Standard Oil was bad per se. For many, their vicarious pleasure in seeing the Supreme Court give Standard Oil and John D. Rockefeller their just desserts was shortlived. While the company was indeed broken up, two factors were discouraging to Standard's critics who were primarily antibusiness.

The first was that while the companies were now compelled to compete with one another, at first it appeared that this "competition" was on paper only. After all, the

same people owned the same properties. One well-publicized result of the dissolution was that one prominent Standard vice-president merely changed titles, and moved to a new office a few feet down the hall at 26 Broadway.

The second disappointment to many critics of business was that while the management of Standard was broken up, and the dominant position of Standard was clearly gone, the owners, John D. Rockefeller among them, appeared to get even richer as a result of the decree. Dividends for holders of Standard's \$100-par stock were reduced from \$37 to \$20[24] but the price of Standard stock and of the other Standard Companies soon began to rise, as dividends increased. Standard of New Jersey had paid its highest dividends before dissolution in 1900 and 1901: 48 percent. The rates in the years before dissolution had ranged between 36 percent and 45 percent. During 1912, the first year following dissolution, 26 of 34 Standard Companies paid dividends amounting to 53 percent of the outstanding capital stock of the old Standard of New Jersey.[25]

During the 4½ months of 1911 prior to the Supreme Court decision of May 15, Standard's stock had risen 61¼ points to 679 3/4 on the day of the decision itself. And the stock was 94 3/4 higher than at its lowest point in 1910.[26]

The following table shows the increases in selected oil company stocks between January and October of 1912:[27]

Company	January	May 15	October
Standard (N.J.)	360-375	384-385	590-595
Standard of N.Y.	260-275	395-405	560-580
Atlantic Refining	260-300	375-395	610-620
Galena-Signal	215-225	225-235	240-245
South Penn Oil	350-375	600-630	800-825
*Texas Company	80-88	98-99	120½-126 3/4
*Houston Oil	8-9¼	10 3/4-11¼	17-23

While the rise in the Standard stocks has been cited as a beneficial result of the Standard Companies break-up, it should be noted that the Texas Company and the Houston Oil Company, both independent companies that were competing with Standard prior to the break-up, were also enjoying substantial increases in the price of their stocks. Thus, economic conditions appear to have been generally favorable for all oil companies, since neither the Texas Company nor Houston had been recently made independent of Standard's management.

While the reaction of the stock market was undoubtedly comforting to Standard's old shareowners, to many of Standard's critics, the rise in value was not "proof" that they had indeed been right that the monopoly of Standard stifled the free market, and thus distorted the true value of the oil industry. Instead, they often reacted bitterly at the shareowners good fortune. Theodore Roosevelt, in his 1912

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* Independent

presidential campaign, commented that "Wall Street's prayer now is: "Oh, Merciful Providence, give us another dissolution."[28]

The reaction of the stock market to the dissolution was not all positive however. There was much controversy alleging insufficient disclosure of information to stockholders, charges of insiders profiting unjustly as stock in some of the companies sky-rocketed, and the stock of at least one company -- Colonial Oil Company -- plunged 400 points due to events within the company.

At one point Financial World advised its readers that the stocks of disaffiliated Standard Companies should be purchased only as "blind speculation."[29] Often information was difficult to obtain from the new management of the companies, unused to dealing directly with the public on such matters. As a result, the New York Curb Association refused to handle the stocks of old Standard Companies who did not make certain information available.

X. Why the Oil Boom after Dissolution?

Three factors are generally cited as the reasons for the explosive progress in the petroleum industry during the 20 years immediately following dissolution of the Standard Trust.

The first fact, and clearly an important one, was the growth of the automobile industry in the United States,

and the accompanying growth in the gasoline market. Henry Ford's decision to manufacture automobiles for the masses had tremendous implications for the oil industry. In 1909, 126,593 motor vehicles were manufactured in the United States. In 1914, 569,054. In 1919, 1,683,916.[30] Prior to 1911, the major petroleum product was kerosine for use as an illuminant. After 1911, the major product was gasoline in a rapidly expanding market.[31] The number of automobiles registered in 1900 was 8,000; 1910, 458,000; 1915, 2,491,000; 1920, 9,239,000; 1925, 19,941,000.[32] In addition to the sheer volume of sales generated, an entirely new marketing system had to be developed geared toward the automotive public. Forward integration was a widespread result.

A second factor behind the petroleum industry growth after 1911 was the coming of World War I. Lloyd George commented that: "The Allies floated to victory on a sea of oil."[33] Whereas serving the gasoline market created strong trends toward forward integration, crude shortages occasioned by the War caused many refining companies to integrate backward into production.[34]

Standard of New Jersey, for example, which supplied almost half of France's petroleum imports during the war, saw its exports of gasoline increase 14 percent in 1917, another 33 percent in 1918. Fuel oil exports increased 221 percent in 1917, another 81 percent in 1918. Standard's sales to the

U.S. Navy from Atlantic ports went from 4,656 barrels in July of 1917 to 368,883 barrels in May of 1918.[35]

While all of the companies suffered severe losses in men, material, and money during the war as the Germans sank tankers supplying the Allies in Europe, clearly the War brought on an expansion to the industry.

The third factor in the growth of all oil companies following 1911 was the discovery of large new crude oil fields. Discovery and especially rapid production of new fields had a significant effect on the market, especially before pro-rationing. While there may be hundreds of producing fields at any one time, up until 1951, for example, only 25 fields had produced 29 percent of the crude output up until that time.[36] Crude production soared from 220.5 million barrels in 1911 to 378.4 million barrels in 1919.[37] Demand -- what with the gasoline market and World War I discussed above -- kept pace. The cost per barrel was \$ .61 in 1911; \$2.21 in 1919.[38] The new discoveries in the West not only helped the industry grow, but also encouraged diversity in its growth as new companies sprang up, and as old independents began to meet the old Standard Companies in size, etc.

XI. Conclusion

The break-up of the Standard Oil Company of New Jersey by the Supreme Court in 1911 was a response to a particular company in a particular setting, and the Court was applying a criminal antitrust statute which had general applicability. The economic conditions which led up to the 1911 decision were entirely different from those prevailing today. Whereas Standard Oil dominated virtually the entire oil industry from the decade of the 1870's to 1911, today the concentration ratios of neither the top 4 nor the top 8 companies can match Standard's earlier dominance.

In addition, wide shareownership of today's oil industry (14 million direct and indirect shareowners of the top 6 companies) contrast sharply with 16 individuals owning 80 percent of Standard Oil, or only 6,000 shareholders in total.

Another contrast is present in the high profit rates of Standard during the decade prior to dissolution compared to oil company profit rates today generally in line with other industries.

It is also apparent that the results of the dissolution would not be applicable to present conditions. Legislation to require the vertical disintegration of oil companies would prevent use of the most effective method that oil companies used to achieve economic viability during the decades following dissolution.

It should also be noted that Standard's monopoly was being dissolved by the normal forces at work in a free economy -- before any government action dissolving it. The period from 1880 to 1911 saw a steady erosion of Standard's relative position and the steady growth of independent competitors such as the Texas Company and Gulf.

Other differences are apparent. No new markets compared to the gasoline market, or the boom years of World War I, appear on the horizon for today's petroleum industry. Most shareowners would be unlikely today to share in a "boom" similar to the one in which oil companies found themselves in the years following 1911. In addition, many oil companies affected by legislation requiring vertical disintegration are not so organized that dismemberment could occur with the relative ease that occurred in 1911.

In sum, examination of conditions prevailing both before and after the dissolution of the Standard Oil Company in 1911 shows no parallel for conditions prevailing today and thus no precedent for the Congress in establishing public policy today.

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Wall Street Journal, Jan. 1, 15; May 15; Oct. 2 and Nov. 11, 1912.

28. Nevins, p. 383.

29. Gibb and Knowlton, Op. Cit., p. 19.

30. Williamson, et al., Op. Cit., p. 190.

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32. Ibid., p. 267.

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35. Gibb and Knowlton, Op. Cit., pp. 224-225.

36. McLean and Haigh, Op. Cit., p. 82.

37. Williamson, et al., Op. Cit., p. 37.

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SOHIO THE STANDARD OIL COMPANY MIDLAND BUILDING, CLEVELAND, OHIO, 44115

CHARLES E. SPAHR
CHAIRMAN

February 19, 1976

FEB 23 1976

The Honorable James O. Eastland
Chairman, Senate Judiciary Committee
and
The Honorable Phillip A. Hart
Chairman, Senate Subcommittee on Antitrust and Monopoly
226 Dirksen Senate Office Building
The United States Senate
Washington, D. C. 20510

Dear Senator Eastland and Senator Hart:

I have been concerned for some time about proposed legislation directed toward the divestiture of integrated oil companies. I and other senior representatives of Sohio have presented our company's views on such matters to your committees this year and in past years. I am taking one more opportunity to express our deep concern on this subject.

A thorough and up-to-date summation of our company's views on the subject of divestiture is contained in the text of remarks which I made earlier this month on the occasion of my appearance as a guest lecturer on business and finance at Mount Union College in Alliance, Ohio. I am submitting these remarks as an attachment to this letter and ask that they be included in the record. I hope that your committees will consider them. I particularly invite your attention to the following statement included in the Mount Union College address:

> "Therefore, I say that those who wish to break up the petroleum industry must be challenged to prove that this will unquestionably result in the production of more energy, for if it results in less energy -- as I am convinced it will -- it will initiate the

rapid destruction of the economic and social well-being of this country.

"Those who call for dismemberment are proposing that the United States make an experiment without precedent in the world. They want to dismantle our energy industry -- the core of our economic well-being. They want to take an entire industry apart -- without producing any factual analysis of what such a step might bring! This is a totally irrational experiment in industrial reorganization by those who have never built a pipeline or operated a refinery or drilled an exploratory well. The guinea pigs in this politically motivated mass experiment will be you and all citizens of this nation.

"The proponents of divestiture must be required to show exactly what would happen immediately after enactment of divorcement legislation; how production would be sustained; how loss of assets of investors would be avoided; how chaos in financial circles would be prevented."

To the best of my knowledge these basic questions still remain unanswered. I pray that before the Committee or the Subcommittee take any further action on the divestiture legislation currently before them -- or on any such legislation -- they will frankly and fairly consider these questions and avoid drastic experiments with a vital industry. Our country can't afford such experiments.

Sincerely,

Charles E. Spahr

CES/jv

Attachment (2)

OIL COMPANY DISMEMBERMENT --

AN EXERCISE IN ENERGY FRUSTRATION

GEORGE H. JUDD LECTURE ON BUSINESS AND FINANCE

MOUNT UNION COLLEGE, ALLIANCE, OHIO

By Charles E. Spahr, Chairman

The Standard Oil Company (Ohio)

February 5, 1976

67-425 O - 76 - 34

I want to talk about the efforts being made in Congress to break up the oil industry. What does this mean? What does it promise — and what doesn't it promise? What effect would such action likely have upon the country and individual citizens?

First, let's consider just who is involved in the current efforts to break up or fragment our country's oil companies. You've got to know who the players are in order to understand the game.

There are at least four major interest groups — and they're all important. First, there are government officials, both elected and appointed. United States senators and representatives, the Department of Justice, the Department of Commerce, the Federal Trade Commission, the Federal Energy Administration, the President, and his cabinet are all involved. State governments, too, have gotten into the issue, but to keep things simple, let's limit our attention to the Federal level — because that's where the action is today.

The second major interest group is the oil industry. What is the oil industry? Well, it's a lot more companies than some people think. At last count there were at least 10,000 oil-producing companies, about 130 refining companies, 100 interstate pipeline companies, and about 200,000 gasoline retailers. However, the oil companies most directly concerned with divestiture or dismemberment proposals are the integrated oil companies.

There are two types of integration — vertical and horizontal. Vertically integrated oil companies function in more than one of the four basic phases of the oil industry — crude oil exploration and production; transportation and pipelining; refining and marketing. There are at least 30 major oil companies in the United States that meet this definition. Sohio is one.

Horizontally integrated oil companies are companies that have diversified within the energy business. Such diversification includes coal, uranium, tar sands, oil shale, solar energy, geothermal energy, and other energy forms. Sohio is also a horizontally integrated, or diversified, company. So are at least 15 of the 30 major oil companies mentioned earlier.

A third important interest group is the news media. In the past 12 months I believe the quality and scope of media coverage of energy matters have improved substantially. So has the media's ability to separate the facts of energy from the fantasies of politicians. Let's hope this performance continues in 1976 — a crucial election year. The issue of oil company dismemberment is so important to the American public that it is vital the news media handle the issue with the thoroughness and objectivity it deserves. I also should note that the media has more than a passing interest in the matter of vertical and horizontal integration since parent companies of *The* New York *Times, The* Washington *Post,* and other members of the media are also integrated and diversified in their respective fields.

Now we come to the fourth and most important interest group of all — the American public — voters, consumers, and ultimate taxpayers who in the long run foot every bill for our government. What does this issue mean to you? Will breaking up the nation's major oil companies produce more energy? Lower prices for energy? Or the reverse? This is a crucial question for the United States because the economic health of the United States is directly linked to its energy supply. Energy means jobs. Lack of energy means fewer jobs.

Now let's get to the issue. Our country is 200 years old. We have achieved a standard of living and wealth of society in general that no other country or economic system has ever reached. The only country that comes close is Sweden. Yet, as a nation, we now stand in fear of our bigness. (Interestingly Sweden's policies are to encourage bigness in order to maintain control of production and give economies of scale.) We lack confidence in our institutions.

The polls tell us that the people of our country lack confidence in government, business, the news media — in fact, almost all major institutions. Public confidence in large corporations, the Federal government, and large labor unions, in particular, is at an all-time low. This is the extremely dangerous background of public opinion as we enter our nation's third century. And yet I think the energy industry, for example, has an enviable record of performance and service to this country. Most of those in political life who wish to restructure the oil indstry in the so-called "interests of competition" aren't very knowledgeable about the oil business and haven't given the matter much study. They are simply following their political instincts.

Public feeling about the oil industry is still highly tinged with the impact of the events of 1973-74 — and the oil industry stands low in public esteem. I don't believe this situation is deserved, but I know we in the industry were ineffective communicators

about the events which influenced public opinion against the oil industry. The finger also can be pointed at many self-serving politicians who eagerly sought to gain headlines and votes out of the difficulties we faced in 1973 and 1974. In my opinion, these self-serving people have done a great disservice to our country with their reckless and emotional attacks on the oil industry.

Now, in this election year, many candidates for public office — including six of those who would be President of the United States — are including arbitrary dismemberment of the oil industry as a part of their platforms for public office.

The "arguments" by these proponents of dismemberment depend on claims that:

"The oil industry is monopolistic in nature; it is controlled by a relatively few companies which restrict competition and inhibit growth of independent companies; and industry profits are excessive."

Now I'm not a great marksman — and there are lots of ducks flying about the country that could testify to that statement — if they could speak — but I can shoot those arguments full of holes, and I'm going to — right now.

Who is monopolizing the exploration and production of crude oil? The 10,000 U.S. oil and gas companies already engaged in the business? The largest producer company accounts for less than 8 percent of all domestic crude oil output. In 1972 the eight largest crude oil producers only accounted for 47 percent of domestic crude oil production. This is not monopolistic concentration by any rational standard.

How about competition in refining? There are about 270 refineries in the United States operated by 131 companies. The largest refiner has less than 9 percent of the total United States refining capacity. This hardly sounds like a monopoly. In 1972 the eight largest refiners only accounted for 59 percent of the petroleum refined in this country. Another enlightening piece of information is that 13 companies have entered the refining business in this country since 1951. This doesn't sound like restraining competition, does it?

What about retail marketing of petroleum? There are about 200,000 service stations in our country, and 95 percent of these are operated by independent businessmen under various major- and private-brand signs. The largest share of the national gasoline market held by a single oil company is only slightly more than 8 percent. Not much of a monopoly here either. In 1972 the eight largest gasoline retailers accounted for only 52 percent of gasoline sales in the United States.

Sohio's trials and tribulations in the Ohio gasoline market are worth noting. In 1970 we had about a 29 percent share of the Ohio retail gasoline market. Today our market share is about 22 percent. That's a big loss! We haven't competed effectively in this market in recent years for a number of reasons, and so our competitors have taken business away from us with a vengeance. Who has gained at our expense? The independent marketers and private brands who have merchandised their products very effectively, even during periods of restricted supply. The figures can be verified from the gasoline tax collection records of the State of Ohio. It's public information. There's a lot of competition in the Ohio retail market, and national trends are similar.

This listing of facts ought to cause an objective person to ponder the situation and reconsider his argument before proceeding further along the monopoly trail. However, many politically oriented critics brush these facts aside and accuse oil companies of collusion or conspiracy — trying to put us in the position of proving a negative: proving that we haven't conspired or colluded. This is almost impossible to do — as any lawyer can tell you.

The contention that the oil industry members have conspired has been investigated by a number of congressional committees. They have found no such fact — but the myth continues to be told — because it's politically useful.

How about petroleum industry profits? Those who would destroy us use terms like "excessive" and "bloated" to describe oil company earnings. During 1975 we studied the history of the petroleum industry profits from 1947 to the present. We used public information to compare the profit history of the 30 largest companies in the petroleum industry with the rest of the American manufacturing industry. We found that during 1947 to 1974 oil industry profits, measured as a percent return on shareholders' investment, were about the same as the average for all United States manufacturing industry. There were some ups and downs — and probably the most striking departure was in 1974 — but over a long period of time profits in the petroleum industry have been about the same as those of any other industry in this

country. These facts get ignored by a lot of people in this country who are calling for breakup of the oil industry.

Yes, 1974 profits in the oil industry were high compared with the oil industry's past, but it should be pointed out that profits reported thus far for 1975 have declined precipitously.

Our study of oil industry profits, made last year, was called "Oil Industry Profits: How Much? Where Do They Go?" I commend it to you for your reading. (It's available by writing to The Standard Oil Company (Ohio), Government and Public Affairs Department, 1735 Midland Building, Cleveland, Ohio 44115). Among other things, the study shows that the oil industry has not paid its stockholders a greater share of profits than other American industry — and it also shows that after paying stockholders' dividends the oil industry has reinvested all its remaining earnings. Three dollars out of every five dollars of this reinvestment have been used for the exploration and production of new energy. That's worth thinking about — and may be the most important point of this study.

Now, when you hear someone decry the "bloated profits" of the oil companies, hold his feet to the fire and challenge him to substantiate that claim with accurate and responsible information. He won't be able to do it.

The information that I have given you should cause you to think twice about the claims of those who wish to vertically dismember the petroleum industry. The petroleum industry does indeed meet all the classic economic tests of competition. Furthermore, independent investigators who have analyzed the petroleum industry have clearly stated their conclusions about competition in the industry. A very recent report by The George Washington University's Energy Policy Research Project entitled "Competition in the Oil Industry," financed in substantial part by the National Science Foundation, concludes: "There is little reason for regulations being imposed on the oil industry." The George Washington University study finds that: "It is one of the least-concentrated industries in the United States." This study, too, concludes that the industry meets all standard tests that measure competitiveness.

Well, what about joint ventures? Critics of the industry claim that networks of joint ventures cause many individual companies to act as one. The petroleum industry has many joint ventures — generally in petroleum exploration and in pipelines.

Walter J. Mead in "The Competitive Significance of Joint Ventures," which appeared in the Antitrust Bulletin of 1967, indentifies the issues in assessing the impact of joint ventures. He says joint ventures can be justified for the following reasons:

1. They permit entry into an industry or activity where absolute capital requirements are so high that only a few large firms could otherwise participate.
2. They permit the sharing of very large risks where otherwise few, if any, existing firms would be willing to participate on their own.
3. Separate operations by competing firms may be economically inefficient.
4. In certain cases, large investments may produce external economies that will accrue to all firms regardless of their participation in the initial undertaking.

Mr. Mead also suggests three possible drawbacks to joint ventures:

1. Competition among horizontally related firms may be restrained because the parents may develop a community of interests that discourage arm's-length transactions.
2. Where the parents have a vertical relationship, market foreclosure may result because of preferred treatment toward the joint venture.
3. The parents may refrain from competing in the same market as the joint venture, thus reducing the total number of competitors in an industry.

While these disadvantages are possible, they are not automatic. Each situation must be examined on its own merits. Certainly it should be clear to any objective analyst that a joint venture, per se, is not persuasive evidence of anticompetitive behavior. Those who say that joint ventures are anticompetitive have a great responsibility to provide convincing evidence that specific joint ventures have been collusive in effect or intent.

One particular form of joint venture in the domestic petroleum industry has received a great deal of attention from policy analysts. That activity is the joint bidding for oil and gas leases in Alaska and offshore areas. Those who have analyzed this form of joint venture find little evidence of anticompetitive behavior and, in fact, have turned up considerable evidence of increased competition among potential oil

producers! (A current news story tells that the Department of Interior is again going to authorize joint bidding in some new offshore lease areas because of the high costs and high risks that attend operations in such places.)

Let me touch briefly on joint ownership of oil pipelines among oil companies. There are more than 250 pipeline companies in the United States moving crude oil or petroleum products. About 100 are regulated by the Interstate Commerce Commission — and about 50 of these are joint ventures of oil companies, railroads, and other firms not engaged in the oil industry.

Opponents of oil company ownership of pipelines object because they say:

- Pipeline ownership can permit anticompetitive behavior by a vertically integrated company;
- Pipeline joint ventures bring otherwise competing companies into close collaboration.

Furthermore, the FTC staff claims that the oil companies owning pipeline joint ventures are able to control distribution of crude oil and the output of independent refiners.

It's important to realize one single fact about pipelines. The Federal government has treated them as common carriers since the beginning of the century. The issue isn't whether pipelines should be regulated, but whether the regulations are adequate.

In dealing with this question, the chairman of the Interstate Commerce Commission recently stated: "Today, there are so few complaints and so few problems that I must say the pipelines are one of the best-run transportation systems we have." Furthermore, it's difficult to find someone who has been abused by the current pipeline systems.

Well then, what do those who advocate breaking up this vertical integration hope to achieve by their proposed actions? Why do they advocate fragmentation? Well, they cite bigness as if it were a sin — and studiously avoid pointing a finger at the Federal government itself. They say oil companies are bigger and more powerful than our government and other governments. They say the Federal Trade Commission and the Department of Justice are moving too slowly in the prosecution of some alleged violations of antitrust. They say we can't wait for the courts to act in due process of the law. Let's make new laws and get what we want by legislation.

I'd like to strongly question the motives of those who decry the inability of the Federal Trade Commission and the Department of Justice to pursue the antitrust complaint against the eight largest oil companies in the United States. Is it possible that the antitrust charges against these oil companies might not, in fact, be very well founded and might not be capable of sufficient documentation to support the charge? Could these alleged antitrust charges simply be politically inspired and not have basis in fact? The charges have a ring of "conviction without evidence" that offends most thinking people.

I can speak with some knowledge about charges and complaints brought by the Department of Justice and the Federal Trade Commission and the factual basis or lack of such basis for them. My company has been subjected to such complaints from time to time. We often find that once a complaint is resolved, as far as the government's lawyers are concerned, the politicians are still unhappy when the facts of the resolution don't support their previous allegations.

Let's return to the basic question. What do the proponents of breaking up the oil industry expect to achieve?

Do they claim this action will result in the production of more energy for our country? This would be important, for we need more energy. Can the proponents of dismemberment document and prove such a claim? Shouldn't we expect them to? Where are the studies and the analyses that should be present to support their contentions? What assurances can they really give us that this great step into uncertainty won't create *less* energy?

If vertical fragmentation of the oil industry resulted in the production of less energy for our country than would be the case otherwise, then this move to break up the oil industry would go down in history as one of the cruelest political hoaxes pulled off on the American public in all time because our economy and the people will suffer if we have less energy. The relationship between energy use and the strength of our economy is well known and well documented. While our country can undoubtedly improve its efficiency in energy use, I know of no responsible person or authority who predicts our economy will need less energy in the years ahead.

Let's review horizontal dismemberment. This means that companies engaged in the production, refining, and distribution of petroleum would be removed from the de-

velopment of any other form of energy — such as coal, oil shale, nuclear fuel, solar energy, etc. Advocates of such action base their desire for horizontal fragmentation on the allegation that orderly expansion of petroleum-based companies into other forms of energy lessens competition or slows the development of alternate forms of energy.

Diversification is a traditional pattern of growth in many American industries. It has happened, naturally, in all kinds of business, including energy. Without it, an industry can quickly become obsolete. When a large company goes out of business the jobs of thousands of people are lost, too. There is no conflict in having petroleum-based companies use their skilled manpower, technology, and money to develop other needed forms of energy. It is one of the industries that can do the job, and the endeavors of a number of industries are needed to get the job done.

Oil company investments and technology are speeding the development of alternate energy resources in coal, uranium, and oil shale today. Consider the facts of coal development. From 1964 to 1973 total coal production increased 2.2 percent a year. During this same period coal production in companies owned by oil companies increased by 4.2 percent per year.

If Congress makes it illegal for the industry most capable of solving America's long-term energy shortage to broaden the nation's energy base through the use of its technical skills and experience, then where will we be?

That's the real issue — the gut issue. What is our national leadership, including Congress, doing to insure that we can meet our energy needs? The answer is: "Almost nothing." 1974 and 1975 have been years of living in a fool's paradise. Our nation has met its energy needs through reduction in demand and increasing imports — not by increasing domestic supply. Reduced energy demand of 1974 and 1975 appears to be the result of higher prices and the business recession, and was not caused by fundamental changes in our efficiency of use. Now business recovery is under way. It will produce an increased demand for energy.

Energy is the single most important factor in all industrial expansion. If the government arbitrarily limits development of the energy industry, it puts our country on a one-way street to economic stagnation.

Recent testimony to a Senate Antitrust and Monopoly Subcommittee by Mr. Joseph Tovey of the investment firm of Faulkner, Dawkins & Sullivan is highly pertinent to this matter. Mr. Tovey is an investment specialist in the petroleum industry. His background of training and experience is impressive.

His testimony indicates that, should horizontal and vertical divestiture of the petroleum industry take place, the developers of alternative energy sources such as coal, oil shale, etc., would not be able to secure adequate capital to continue the development of these important energy sources. Other students of the industry have reached similarconclusions. If the segments of a divested industry could not hope to form the capital necessary for their expansion, the result would be catastrophic for our country.

Therefore, I say that those who wish to break up the petroleum industry must be challenged to prove that this will unquestionably result in the production of more energy, for if it results in less energy — as I am convinced it will — it will initiate the rapid destruction of the economic and social well-being of this country.

Those who call for dismemberment are proposing that the United States make an experiment without precedent in the world. They want to dismantle our energy industry — the core of our economic well-being. They want to take an entire industry apart — without producing any factual analysis of what such a step might bring! This is a totally irrational experiment in industrial reorganization by those who have never built a pipeline or operated a refinery or drilled an exploratory well. The guinea pigs in this politically motivated mass experiment will be you and all citizens of this nation.

The proponents of divestiture must be required to show exactly what would happen immediately after enactment of divorcement legislation; how production would be sustained; how loss of assets of investors would be avoided; how chaos in financial circles would be prevented.

I hope that you both understand and share the alarm and frustration that those of us who are the targets of this politically inspired exercise feel so strongly. The facts don't support the contentions of those who call for dismemberment, but who is seeking the facts of the matter? Those in government? The media? The public who will be the final frustrated victim of all this non-

sense? It doesn't appear that anyone is doing so yet.

At a time when our country's energy industry should be free to develop our energy resources with due regard for the environment as quickly as possible — at this very time we must use our time and our energies to defend ourselves against political opportunists who would dismember the oil industry without regard for the consequences.

Ladies and gentlemen, let's sum up what I've tried to say. We are celebrating our nation's 200th birthday at a time when the people of our country are clearly searching for guideposts to the future. Events of the early 1970s within and without our country have seriously undermined confidence in our major institutions. Against this national background of distrust we'll shortly have a national political election in which many of those seeking office will attempt to gain votes and office by attacking the oil industry and calling for its dismemberment.

Recent events make me believe that a climate for rational, intelligent, and objective analysis of these proposals hasn't returned in our country yet and, therefore, that these proposals are extremely dangerous to our future.

They are dangerous because they're built upon fiction — not fact. They're dangerous because, if implemented, they'll result in less energy being available to fuel our economy. They're dangerous because they will destroy investments, cause default on many debt obligations, and thereby severely damage our financing institutions and financial markets. They're dangerous because the resultant stagnation of our economy and the ensuing national frustration can lead to an attempt by government to take over, step-by-step, the entire direction of United States industrial activity, beginning with the oil industry.

Ladies and gentlemen, 1976 is an important year for our nation to celebrate. Let's see that we don't celebrate our 200th birthday by assuring ourselves that we will not have a 300th.

Thank you!

CITIES SERVICE COMPANY
CITIES SERVICE BUILDING
BOX 300
TULSA, OKLAHOMA 74102

ROBERT C. MOORE
VICE PRESIDENT
PUBLIC AFFAIRS

February 19, 1976

Charles E. Bangert, Esq.
General Counsel
Senate Subcommittee on
Antitrust and Monopoly
Room A517
119 D Street, N.E.
Washington, D.C.

Re: Hearings on Proposed Petroleum Industry Divestiture Legislation

Dear Mr. Bangert:

This correspondence is prompted by the remarks of Senator John A. Durkin, New Hampshire, and one of his constituents, Mr. John Warren, relative to subject before the Senate Subcommittee on Antitrust and Monopoly on February 3, 1976, wherein the operations of Cities Service Company, its affiliates and subsidiaries, were strongly taken to task. Cities Service considers much of that testimony to be nothing more than an irresponsible and inflammatory expression of the Senator's preconceived notions on factually unsupportable and subjective topics.

The content and tenor of the Senator's remarks deem necessary and appropriate this request that you enter of record with the Subcommittee the attached response of Cities Service Company; the form of which is directly intended to avoid idle colloquy by introduction into that record the statements of charge leveled by Messrs. Durkin and Warren with a concise statement of the facts in reply thereto.

Charles E. Bangert, Esq.
February 19, 1976

Page 2

In closing, I might parenthetically add that Cities Service is in full agreement with Senator Durkin on one point, that being his statement that "the industry could use a break from the oppressive and inept price controls of a federal bureaucracy and respite from the constant threat of nationalization."

Your attention to this matter before the Subcommittee is respectfully appreciated.

Very truly yours,

RCM:ss

R Moore

Response of
Cities Service Company
to Remarks of
Senator John A. Durkin and Mr. John Warren
Before the
Senate Subcommittee on Antitrust and Monopoly
on
February 3, 1976

R. C. Moore
Vice President
Public Affairs
February 19, 1976

STATEMENT

John Warren operated a two-pump service station.

FACT

This was a conventional type station with three pumps -- two gasoline and one diesel.

STATEMENT

His annual volume increased steadily each year during that period.

FACT

Volume history for the location from 1965 to 1972 shows no growth as indicated below:

Year	Gallons (000)
1965	247
1966	240
1967	301
1968	312
1969	258
1970	244
1971	234
1972	214

STATEMENT

Station Warren had operated for 17 years was torn down and replaced with a new three-pump station.

FACT

A Quik-Mart was constructed utilizing four dual pump or eight hoses.

STATEMENT

Another CITGO dealer in Manchester complained to the FEA that his supply of fuel was being cut back while the new company-owned station on Mr. Warren's old site was plentifully supplied.

FACT

1. Base established by region at 80,000 gallons per month.
2. Unit allocated off base at same fraction as lessees.
3. Additional volumes, when available, come from state set-aside and small amounts from transfer of other salaried units.
4. N.O.P.V. issued June, July of 1974, sales cut back approximately 50,000 gallons per month.
5. August, September of 1974, indications from FEA that we could go back to 80,000 base.
6. Remedial order issued October 1974 to February 1975, severe cutbacks and reduced hours. Volume declined very dramatically.

7. Remedial order rescinded February 6, 1975, allowing us to return to base of 80,000 gallons.
8. Volumes given to Quik-Mart in firm compliance with FEA regulations with no favoritism given Quik-Mart that was outside legal boundaries.

STATEMENT

The number of CITGO stations in Manchester has dropped from six to two.

FACT

Currently there are three stations in operation in Manchester -- one a contract dealer account, the second a lessee dealer unit and the third the company-operated Quik-Mart. Of the three locations no longer in operation, one was a contract dealer account that changed to the Anchor brand. A second location was one on which our base lease expired March 31, 1974, and was not renewed. The third location was a lessor-built facility on which a mutual termination was secured from the landlord. To our knowledge, the last two locations are still in operation, but we do not know under what brand.

STATEMENT

When Mr. Warren started pumping gasoline in Manchester, he was charging about 22¢ per gallon. CITGO on the same side is now charging 53.9¢ per gallon for Regular, which is 5¢ beneath the price of other dealers in town, including CITGO dealers.

FACT

According to the statements made by Senator Durkin, Mr. Warren started in this station 17 years prior to his leaving in 1973, which would have been about 1956. We do not have available records to indicate what the dealer tank wagon was in 1956, but are certain that a number of conditions are changed, leading to the current retail level. Not only has the cost of crude escalated from less than $2 per barrel to our current weighted average level of $10.17 per barrel, but also there have been increases in both state and federal taxes as well as a substantial increase in dealer margins.

STATEMENT

After years of litigation, CITGO was divested of its holdings in Jenney properties by consent agreement based on alleged restraint of trade violations.

FACT

Through a Consent Decree approved by both the Justice Department and Federal Court, CITGO was not ordered to divest its holdings in all Jenney properties. This Consent Decree was limited to 15,275,000 gallons and was not identified with any specific properties, only volume. The disposal of this volume can either be by Jenney properties, CITGO properties, or a combination of the two.

STATEMENT

The Attorney General of Maryland brought a similar suit [to the Justice Department antitrust suit against CITGO as a result of its acquisition of Jenney] against CITGO for violation of the State's antitrust statutes.

FACT

The Jenney suit and the Maryland Attorney General litigation were initiated and maintained under distinctly differing legal theories and factual disputes. The Jenney suit was an alleged violation of Section 7 of the Clayton Act dealing with acquisitions, and the Maryland Attorney General litigation was brought under a section of that State's antitrust laws similar to Section 3 of the Clayton Act dealing with alleged violations concerning tying arrangements and coercion.

STATEMENT

CITGO dealer Bud Mech had his gasoline cut off and his franchise revoked by Cities Service.

FACT

Mech has maintained continuous occupancy of the branded CITGO retail facility leased to him from inception of the dispute to the date of this response and has received from Cities Service all volumes of product allocated to him on an annual basis pursuant to Federal Energy Administration regulations. All disputes and litigation between Cities Service and Mr. Mech have been resolved to the mutual satisfaction of both parties and formal dismissal to that effect entered with the court.

STATEMENT

The dealer in Tyson's Corner, Virginia, had to go to court to prevent the takeover of his operation by CITGO following a decision by the FEA offices that his prepaid gasoline contracts were illegal.

FACT

This dealer's program of preselling gasoline to customers first came to our attention in the general office by virtue

of newspaper articles in the "Washington Post" on Friday, February 8, 1974. To counteract this, a company statement was prepared for use by our personnel in responding to inquiries from the "Washington Post" and the FEA. Our disavowal of the plan was published in the "Washington Post" on February 12, 1974. As this method of sale was subsequently declared improper by the FEA, the dealer did have to discontinue same, and as a result owed substantial monies to those customers who had prepaid.

On July 31, 1974, all contractual relations between Cities Service Oil Company and the dealer at Tyson's Corner, Virginia, were mutually canceled with Cities Service incurring substantial monetary losses on the account due and owing by that dealer to Cities Service. There was never any litigation initiated by either party against the other.

STATEMENT

As recently as six (6) months ago, CITGO was cited by the House Investigations Subcommittee for shutting in some of its most productive wells for nearly four months ... [and] that CITGO's intentions were apparently to withhold gas from the interstate market until the pressure for decontrol of natural gas prices became too much for the Congress to bear.

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FACT

Details concerning the workover of the six wells from a single offshore platform operated by Cities Service Oil Company for itself and three other companies have been thoroughly examined in a proceeding commenced by the Federal Power Commission on January 8, 1975, in Docket RP 75-51. This proceeding is currently in the hearing stage before an Administrative Law Judge of the agency. Testimony of the FPC staff, including a report of findings of recent studies, was presented the same day as the remarks in issue by Senator Durkin. An undisputed finding of fact by the House Subcommittee investigation mentioned by Senator Durkin is that "there is no question that the replacement of tubing in the Block A-76 wells was vital and necessary to the continued production of gas from this reservoir." Preliminary Staff Report, July 18, 1975, at Page 5. The pendency of this proceeding and the fact that the matter is not ready for the Administrative Law Judge's opinion precludes further reply to the Senator's statements at this time.

COMPETITION IN THE OIL INDUSTRY

William A. Johnson
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December 1975

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SUMMARY

Is the oil industry competitive? On its face, this question seems rather straightforward. Either the industry is workably competitive or it is not. All that would seem necessary is to hire an economist to do a study. Yet, the question of competition in the oil industry has provoked debate almost since the formation of the first oil company in 1861. Critics of the industry have pointed to one set of indicators as proof of monopoly; defenders have pointed to another as proof of competition. Policymakers have been caught in the middle, bombarded by innumerable studies and bewildered by the conflicting claims of experts. As a result, the issue has never been resolved. Nor has the debate ended.

Now, because of high prices, shortages following the Arab embargo and complaints by some small oil companies, competition in the oil industry has again emerged as a major issue of public policy. Hearings are being held by several committees of both Houses of Congress. Legislation has been introduced that would break-up the largest companies. The Federal Trade Commission staff is now prosecuting the eight largest U.S. oil companies for antitrust violations, and several academicians have written treatises arguing for drastic restructuring of the oil industry.

This paper does not claim to have resolved fully the issue of competition in the oil industry. However, it critically reviews the charges made against the oil industry, finding that some are frivolous, some are without factual foundation, and some are unanswerable without further study and analysis. It also suggests that many of the alleged anticompetitive practices in the industry are not the

result of collusion, but can be traced to often ill-advised policies of state and national government, as well as various regulatory bodies in Washington. Finally, the paper argues that the real issue facing the Nation is greater U.S. energy self-sufficiency. Attempts to punish the oil industry for alleged anticompetitive behavior are contrary to the national interest, if for no other reason than because they detract from the achievement of this goal.

COMPETITION IN THE OIL INDUSTRY

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Because of sharply higher prices, shortages of oil following the Arab embargo, and complaints by some independents that they are being put out of business, there has been growing dissatisfaction with the oil industry and the major oil companies in particular. Although public concern over recent developments is understandable, these developments are primarily the result of actions by the Organization of Petroleum Exporting Countries (OPEC) and especially the Arab countries. But, as is often the case in times of adversity, it is easier to attack the enemies within rather than the more distant and less assailable adversaries abroad. And, to many in the United States, the most visible enemies within are the major oil companies.

For this reason, during the past two years there have been a number of proposals to stiffen regulation of the oil and gas industry. At the federal level, much of 1974 was spent in debating the Consumer Energy Act, a bill that, in some of its incarnations, would have reduced the oil and gas companies to the status of public utilities.[1] The 94th Congress is considering a number of bills that would establish a federal energy production company and require divorcement of certain industry activities. Several

1. For example, see Hearings on the Consumer Energy Act of 1974 before the Senate Commerce Committee, 93d Cong., 2d Sess., pt. 4, 1974, p. 1357. See, also, Oil and Gas Journal, April 15, 1974, p. 19.

states have introduced legislation or sponsored referenda that would also increase regulation of the oil and gas industry. The purpose of this paper is to discuss the various arguments given for greater regulation of the industry and whether these arguments are correct.

1. CONCENTRATION IN THE OIL INDUSTRY

Is the oil industry monopolistic? Assessing the level of monopoly power in an industry is a difficult task. The primary problem is that there are many views about what monopoly is and how it should be measured; no single measure is universally accepted. There is the additional problem that what is a monopoly in one situation may not be in another. And, while it is difficult to measure monopoly in one industry, it is even more difficult to make cross industry comparisons.

Yet, to many critics of the oil industry as well as many men on the street the energy industries are obviously controlled by a few large companies. For example, Congressman (and announced presidential candidate) Morris Udall has asserted: "By any reasonable criteria of what constitutes a concentrated industry . . . the energy industry qualifies and is in clear violation of the intent of the antitrust laws."[2]

Congressman Udall is correct in one sense. Because monopoly generally involves one or a few sellers in control of a market, it has become customary to measure monopoly in terms of concentration ratios. By definition, a concentration ratio is the percentage of assets, value added, or output accounted for by a specified number of the largest companies in an industry.

2. Cited in Oil and Gas Journal, April 28, 1975, p. 31.

Government studies of monopoly have traditionally used concentration ratios based upon value added by the largest four or eight companies in an industry.

In the interest of consistency, the government definition of concentration is adopted here. Where value added data are not available, we use alternative measures to compute concentration ratios. However, the underlying principle remains the same, whether the concentration ratio measures the percentage of reserves of a resource held or the dollar sales of a product. For a specified number of companies, the higher the concentration ratio, the greater the monopoly power in an industry. The greater, also, will be the justification for imposing special controls on the industry.

Concentration ratios are by no means a foolproof measure of monopoly power in an industry. A few large, dynamic companies may provide more effective competition in an industry than many small, static companies. The chain supermarket vs. the corner grocer is an example often cited. Even so, concentration ratios remain one of the most widely used measures. Where monopoly power is found it often involves a small number of companies in control of an industry. Also, the smaller the number of dominant companies in an industry, the easier for these companies to follow a price leader and arrive at tacit agreements concerning output.

Table 1 contains the percentage of reserves, production, refining, sales, shipments, or capacity accounted for by the largest companies in various energy industries. Tables 2 and 3 present concentration ratios for other industries. These data indicate that the oil industry is no more concentrated than other energy industries. Perhaps more significant,

TABLE 1

CONCENTRATION RATIOS FOR
MAJOR SECTORS OF THE ENERGY INDUSTRY
OF THE UNITED STATES

Sector	Percentage Accounted for by the Largest 4 Companies	Percentage Accounted for by the Largest 8 Companies
Crude Oil Reserves		
1970	37.2	63.9
Crude Oil Production		
1955	18.8	31.1
1970	30.5	50.1
1972	29.4*	46.9*
Total Crude Oil and Natural Gas Liquids Production		
1972	28.8*	45.8*
Petroleum Refining		
1955	32.8	57.5
1972	33.1	59.0
Gasoline Sales		
1954	31.2	54.0
1972	29.0	51.6
Natural Gas Sales (Interstate)		
1955	23.0	35.0
1971	25.3	42.8
Lubricating Oils and Greases		
1967	38.0**	50.0**
Uranium Mining and Milling Capacity		
1971	54.4***	78.5***
Coal Production		
1955	16.5	24.0
1972	30.4	40.4

Source: Unless otherwise noted, data is from various tables in Thomas D. Duchesneau, Competition in the Energy Industry, Ballinger Publishing Company, Cambridge, Mass., 1975.

*Moody's Industrial Manual, Petroleum Engineer and U.S. Bureau of Mines.

**U.S. Government, 1967 Census of Manufactures: Concentration Ratios in Manufacturing, Department of Commerce, Bureau of the Census, Washington, D. C., 1967.

***Duchesneau, developed from AEC, The Nuclear Industry, Washington, Government Printing Office, 1971, p. 20.

TABLE 2

CONCENTRATION RATIOS FOR MAJOR
INDUSTRIAL SECTORS OF THE UNITED STATES (1967)

Sector	Percentage of Value of Shipments Accounted for by the Largest 4 Companies	Percentage of Value of Shipments Accounted for by the Largest 8 Companies
Primary Aluminum	d	100
Flat Glass	94	98
Motor Vehicles	92	98
Primary Copper	77	98
Tires and Inner Tubes	70	88
Aircraft	69	89
Industrial Chemical Bases	67	84
Alkalines and Chlorine	63	88
Synthetic Rubber	61	82
Blast Furnaces and Steel Mills	48	66
Industrial Trucks and Tractors	48	62
Semiconductors	47	65
Weaving Mills (synthetic)	46	54
Ship Building and Repairing	42	59
Construction Machinery	41	53
Lubricating Oils and Greases	38	50
Fertilizers	35	55
Petroleum Refining	33	57
Steel Pipes and Tubes	32	45
Weaving Mills (cotton)	30	48

Source: U.S. Government, 1967 Census of Manufactures: Concentration Ratios in Manufacturing, Department of Commerce, Bureau of the Census, Washington, D. C., 1967.

d. The government withholds these data to avoid disclosing information about individual companies.

TABLE 3

CONCENTRATION RATIOS FOR
OTHER SELECTED INDUSTRIAL SECTORS
OF THE UNITED STATES (1967)

Sector	Percentage of Value of Shipments Accounted for by the Largest 4 Companies	Percentage of Value of Shipments Accounted for by the Largest 8 Companies
Locomotives and Parts	97	99
Electric Tubes (Receiving)	94	99
Electric Lamps	91	95
Hard Surface Floor Coverings	89	99
Steam Engines and Turbines	88	98
Chewing Gum	86	96
Primary Batteries	85	95
Cathode Ray Picture Tubes	84	98
Cigarettes	81	100
Typewriters	81	99
Sewing Mcahines	81	92
Gypsum Products	80	93
Chocolate and Cocoa Products	77	89
Household Vacuum Cleaners	76	94
Woven Carpets and Rugs	76	93
Electrometallurgical Products	74	90
Medicinals and Botanicals	74	81
Household Refrigerators and Freezers	73	94
Metal Cans	73	84
Mineral Wool	71	84
Electron Tubes (Transmitting)	70	87
Soap and Other Detergents	70	78
Photographic Equipment and Supplies	69	81
Cutlery	69	77

TABLE 3 CONTINUED

Sector	Percentage of Value of Shipments Accounted for by the Largest 4 Companies	Percentage of Value of Shipments Accounted for by the Largest 8 Companies
Explosives	67	91
Greeting Card Publishing	67	79
Beet Sugar	66	96
Aluminum Rolling and Drawing	65	79
Transformers	65	78
Thread Mills	62	81
X-Ray Apparatus and Tubes	62	77
Storage Batteries	61	83
Glass Containers	60	75
Primary Zinc	59	90
Phonograph Records	58	67
Soybean Oil Mills	55	76
Ball and Roller Bearings	54	73
Knitting Mills	54	71
Distilled Liquor (Except Brandy)	54	71
Ceramic Wall and Floor Tile	52	76
Commercial Laundry Equipment	51	63
Radio and TV Receiving Sets	49	69
Sanitary Food Containers	49	68
Printing Ink	49	64
Wines, Brandy, and Brandy Spirits	48	63
Motors and Generators	48	60
Abrasive Products	48	57
Watches and Clocks	47	63
Pulpmills	45	70

TABLE 3 CONTINUED

Sector	Percentage of Value of Shipments Accounted for by the Largest 4 Companies	Percentage of Value of Shipments Accounted for by the Largest 8 Companies
Cheese	44	51
Raw Cane Sugar	43	65
Cottonseed Oil Mills	42	60
Copper Rolling and Drawing	41	65
Venetian Blinds and Shades	41	57
Wallpaper	39	55
Metal Office Furniture	38	52
Lubricating Oils and Greases	38	50
Lime	35	54
Petroleum Refining	33	57

Source: U.S. Government, 1967 Census of Manufactures: Concentration Ratios in Manufacturing, Department of Commerce, Bureau of the Census, Washington, D. C., 1967.

all energy industries, including oil, are far less concentrated than many non-energy industries. While concentration ratios in the oil industry range from 29 to 38 percent for the largest four companies, in other major industrial sectors the ratios range from 30 to 92 percent. While the four largest oil companies control 33 percent of U.S. refinery output, the four largest companies control 86 percent of the output of chewing gum, 81 percent of the output of typewriters, 67 percent of the output of greeting cards, and 91 percent of the output of electric lamps. Based on concentration alone there would seem to be greater reason to regulate as monopolies the chewing gum, typewriter, greeting cards, and electric lamp industries. And, if these examples seem trivial, the largest four companies producing industrial chemicals, primary copper, flat glass, and motor vehicles account for 67, 77, 94, and 92 percent of their industrial output respectively. These industries are just as basic but, given their concentration, seem to be far more deserving of special regulations than the oil industry.

Nor does it appear that the various segments of the oil industry have become more concentrated over time. (See Table 1.) The one exception is the greater share of large companies in crude production between 1955 and 1972, a trend that probably reflects the growing importance of off-shore production. Drilling on the outer continental shelf is difficult and expensive and, for this reason, beyond the capabilities of many small companies.

In short, the evidence does not indicate that the energy industries are highly concentrated. To the contrary, it suggests that these industries are relatively unconcentrated.

This conclusion is shared by others who have studied the industry's market structure. Duchesneau, in what is perhaps the most thorough study of concentration in the energy industries, also finds concentration levels to be relatively low.[3] However, concentration levels, by themselves, do not prove or disprove the existence of a competitive industry. Critics of the industry often admit that concentration levels are relatively low, but argue that anticompetitive behavior is manifested in other ways such as through vertical integration and joint ventures. Before considering these other issues, however, we first examine a special form of alleged concentration in the marketplace which has occupied a substantial amount of the time of the Congress and the Federal Energy Administration during the past two years--the argument that the major oil companies are increasing their share of the market for gasoline.

2. MARKET SHARES IN THE SALE OF GASOLINE

One charge that has been leveled against the major oil companies in recent years is that they have expanded their share of the marketplace for refined products, especially gasoline, at the expense of independent marketers. Responding to this criticism, the Congress has required the President to issue monthly reports on gasoline market shares. The market shares issue has been a source of seemingly endless confusion. Critics of the oil industry have claimed that the major oil companies are driving

3. Thomas D. Duchesneau, Competition in the U.S. Energy Industry, Cambridge, Mass., Ballinger Publishing Company, 1975, Chapter 2.

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independents from the market, that they are dominating the market in particular regions of the country, and that this is good reason for additional regulation of the large oil companies.[4] To the contrary, we conclude that:

-- There are many definitions of the word, "independent," with the result that the discussion of the problems of the independents has been hopelessly confused.

-- Using most definitions of "independent," there is no significant trend in the independent oil companies' share of motor gasoline sales between 1970 and 1974. If anything, gasoline sales have become less, rather than more, concentrated in the hands of the major integrated oil companies.

-- There is no substance to the charge that major oil companies are withdrawing from some market areas and increasing their market share in other areas in order to dominate particular regions.

-- Based on an analysis of market shares, the retail marketing of gasoline appears highly competitive.

In its preliminary report on the petroleum industry the Federal Trade Commission concluded that, "There can be little doubt that the independent sector of the petroleum industry, especially at the marketing level, has suffered most as a result of the present gasoline shortage."[5] Similarly, the Center for Science in the Public Interest, a public interest group,

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4. The legal issues raised by this alleged behavior are discussed in Note, "The Gasoline Marketing Structure and Refusals to Deal: A Sherman Act Approach," 16 Arizona Law Review 465, (1974).

5. U.S. Senate, Committee on Government Operations, Preliminary Federal Trade Commission Staff Report on Its Investigation of the Petroleum Industry, 93d Cong., 1st Sess., Comm. Print, 1973, p. 2.

has charged that, "The major oil companies have tended to concentrate their power in recent years through the acquisition of other oil and fuel companies. The major oil companies have undertaken a policy of concentrating their market areas in certain geographic regions and of disposing of their stations in other areas."[6] Allvine and Patterson attempt to show how the majors have been able to squeeze independents out of gasoline markets.[7] They discuss various factors which, they believe, have enabled the majors to increase their market shares, such as industry concentration, cartelization of crude production, federal tax breaks, and the import quota system. They also claim that the majors have effected this squeeze in other ways. These include underinvestment in new refinery capacity, underutilization of existing refinery capacity, withdrawal of the independents' supply, and the use of flashy and expensive marketing techniques. Significantly, Allvine and Patterson never attempt to demonstrate whether the squeeze on the independents by the majors has actually taken place. In this section, we present data that suggest, in fact, that there has been little or no squeeze. The Allvine-Patterson argument is discussed at greater length in Section 4.

Even prior to the Arab oil embargo in 1973, protecting the independents' market share of gasoline sales had emerged as a major policy issue. This issue was not without some basis. The independent sector had been a highly competitive force in marketing refined products, especially gasoline.

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6. A. J. Fritsch and John W. Egan, Big Oil: A Citizen's Factbook on the Major Oil Companies, Center for Science in the Public Interest, 1973, p. 59.
7. Fred C. Allvine and James M. Patterson, Highway Robbery: An Analysis of the Gasoline Crisis, Bloomington, Indiana, Indiana University Press, 1974.

There was genuine concern in 1973 that the major oil companies might use the developing scarcity of gasoline and other refined products as a way of consolidating markets and raising prices. Also, some independent marketers had come to depend on purchases in the spot market at advantageous prices. As shortages began to appear, the spot market disappeared and the continued existence of these marketers was threatened.

On its surface the issue does not appear too complex. Either independents are being forced out of the marketplace or they are not. All that would seem to be needed is to examine the facts. However, analysis of this issue has never really progressed beyond a debate over the proper definition of the term "independent."

What is an independent? The oil industry is highly integrated; the 18 largest oil companies all own production, refining, and distribution facilities. If one were to define an independent on the basis of market share, which sector of the industry should be examined: crude oil sales, refinery sales, or product marketing? And, when independent crude oil producers sell to major refiners who, in turn, sell to independent gasoline dealers the problem becomes even more complex. Under these conditions, it is not surprising that there are many possible definitions of the term "independent."

Independent refiners can be classified by: control over crude production and, therefore, refinery input; size of total refinery capacity; size of individual refineries; or control over product. Developing an objective classification is difficult; some "independent" refiners operating small refineries could be defined as majors with respect to their crude supplies.

Distribution of gasoline and its retail sale is even more complex. Eighty-five percent of the Nation's retail service stations are privately

owned and operated. Some independents sell gasoline under a brand name; some do not. There are also branded and nonbranded company-owned stations. There are independent and company paid jobbers (wholesale gasoline distributors), some of whom sell branded gasoline as well as nonbranded gasoline. Clearly, an assessment of the independents' market share has little meaning unless the term "independent" is agreed to and clearly defined from the start.

The Emergency Petroleum Allocation Act of 1973 charged the government with preserving the independent marketers' share of gasoline sales. In addition, the government is required to report monthly changes in the independents' market share. During the early months of the Arab oil embargo, the Federal Energy Office was too preoccupied to pay much attention to these provisions. Finally, in April 1974, Temple, Barker and Sloane, a consulting firm commissioned to study market shares in gasoline sales, found that the independents' market share had fallen sharply since the previous year.[8] However, two basic errors were made in this study. First, it defined independents as marketers not selling under a major brand name rather than as owners of service stations as required by law. The definition used by the study was, if anything, more applicable to the crude oil allocation program than to the gasoline allocation program. In addition, the consultant's study combined two disparate sets of data, the second, more recent set clearly being faulty.[9] As a result, the study's

8. Temple, Barker & Sloane, Inc., "An Evaluation of Alternative FEO Allocation Programs on Motor Gasoline Markets and Marketers," April 11, 1974.

9. In particular, it combined Lundberg Survey data prior to December 1973 with data generated by the Federal Energy Office and compiled by TBS after December. The apparent sharp reduction in market shares for independents, suggested by the TBS survey, occurred at the time of the break in data. We are especially indebted to Daniel Lundberg for assistance in using and interpreting the Lundberg Survey data in this and the following sections.

conclusion, that the non-major market share had fallen from 29 percent in 1972 to 19 percent in April 1974, was incorrect. Copies of the report were withheld by FEA because of the study's shortcomings. Subsequently, all outstanding copies were ordered destroyed by then acting FEO Administrator John Sawhill. Nonetheless, rumors that an FEO study had found that the independents' market share had been seriously eroded leaked to the public, lending substance to similar charges made by certain independent marketers.

We present in Table 4 three additional series based on three separate definitions of "independent."[10] One is a corrected version of the Temple, Barker and Sloane survey based on one consistent set of data--the Lundberg Survey.[11] With hindsight, and using the TBS definition of "independent," there would appear to have been, if anything, a slight increase in the independents' market share between 1972 and 1974.

The second series presented in Table 4, also based on the Lundberg data, assumes the definition implicit in the Federal Trade Commission's current investigation of the eight largest major oil companies.[12] Using this

10. These series are based on the Lundberg data which are, in turn, based on state tax receipts. Sometimes major distributors will pay the tax and then resell gasoline to non-branded retailers. This poses a problem for someone attempting to assign market shares between "majors" and "independents" using the Lundberg data.

11. The TBS survey defines a major marketer as a distributor selling under the name of a refiner having 175,000 bpd or more of refinery capacity. According to the TBS report, this includes: Phillips, Sun, Union, Sohio, Citgo, Conoco, Marathon, Ashland, Hess, and American Petrofina. All others are defined as non-majors. The FEA has now repudiated this definition.

12. The FTC is investigating the eight largest oil companies: Exxon, Texaco, Gulf, Mobil, Chevron, Amoco, Shell and Arco. Therefore, the FTC definition of a non-major, used here, is the share of gasoline sales by companies selling under names other than those listed above.

TABLE 4

RETAIL SALES OF GASOLINE BY NON-MAJOR OIL COMPANIES
(percent of total sales)

ANNUAL

Date	TBS Definition	FTC Definition	Conventional Lundberg Definition
1970	23.8	45.4	22.6
1971	25.7	47.2	24.4
1972	27.4	48.4	26.7
1973	27.2	47.6	26.7
1974 (Jan-June)	27.8	48.2	26.4

MONTHLY

Date	TBS Definition	FTC Definition	Conventional Lundberg Definition
1973			
Jan.	28.4	49.4	26.8
Feb.	28.4	49.5	26.7
Mar.	27.7	48.4	26.1
Apr.	27.6	48.1	25.9
May	26.1	46.1	24.4
June	26.2	46.5	24.7
July	26.2	46.4	25.2
Aug.	26.0	46.2	25.1
Sep.	27.1	47.5	26.3
Oct.	27.3	48.0	26.4
Nov.	27.2	48.0	26.3
Dec.	28.6	49.4	27.3
1974			
Jan.	27.8	48.7	26.6
Feb.	28.5	49.0	27.0
Mar.	27.9	48.6	26.7
Apr.	28.8	48.3	27.0
May	27.2	47.6	25.9
June	26.7	46.7	25.4

Source: All calculation of market shares are based on the Lundberg Survey of the Gasoline Market, 1970 to 1974.

definition, it would again appear that, if anything, the market share of the independents has increased slightly over time.

The third set of data on market shares, presented in Table 4, assumes the definition of "independent" used in the Lundberg Survey. This Survey is the only continuous source of data on gasoline sales by company readily available to the public. Lundberg has been publishing his own survey of market shares for a number of years. This survey indicates a persistent increase in the non-majors' share of the market since 1970. Unfortunately, Lundberg's data do not correspond to the definition of independent or non-major used by FEA or adopted by the Congress in the Emergency Petroleum Allocation Act. Once again, these data are based on brand name rather than ownership of station.[13]

For this reason, the Federal Energy Administration commissioned Lundberg to rework his data to develop a series on market shares consistent with the definition of "independent" contained in the Emergency Petroleum Allocation Act.[14] The results, reproduced in Table 5, suggest that the share of all independents remained more or less constant between January 1972 and April 1974, with a slight decrease in the share of branded independents and a corresponding increase in the share of nonbranded

13. In particular, Lundberg defines a non-major as any gasoline retailer not flying the Exxon, Texaco, Shell, Mobil, Gulf, Amoco, Chevron, Arco, Sun, Phillips, Union, Conoco, Citgo, Ashland, Marathon, Sohio, Tenneco, Getty, BP Oil, and Skelly flags. This definition reflects the needs and interests of Lundberg's subscribers.

14. The revised Lundberg study is discussed in Federal Energy Administration, Petroleum Market Shares: A Progress Report on the Retailing of Gasoline, Washington, D.C., U.S. Government Printing Office, August 6, 1974, pp. 3-8.

TABLE 5

PERCENTAGE SHARE OF THE GASOLINE MARKET BY TYPES
OF MARKETERS AS REPORTED BY LUNDBERG SURVEY, INC.

	Branded Independents	Nonbranded Independents	Total Independents	All Other
1972				
Jan.	75.93	9.72	85.65	14.35
Feb.	76.25	9.54	85.79	14.21
Mar.	75.85	9.71	85.56	14.44
Apr.	75.38	10.20	85.58	14.42
May	74.97	10.20	85.17	14.83
June	75.08	10.01	85.09	14.91
July	75.35	10.01	85.36	14.64
Aug.	74.91	9.89	84.80	15.20
Sep.	74.63	10.27	84.90	15.10
Oct.	73.05	10.78	83.83	16.17
Nov.	74.24	10.87	85.11	14.89
Dec.	74.02	10.88	84.90	15.10
Total:	74.95	10.18	85.13	14.87
1973				
Jan.	73.59	11.71	85.30	14.70
Feb.	73.89	11.82	85.71	14.29
Mar.	74.56	10.65	85.21	14.79
Apr.	75.47	10.43	85.90	14.10
May	75.32	9.78	85.10	14.90
June	75.12	10.53	85.65	14.35
July	75.54	9.86	85.40	14.60
Aug.	75.76	9.76	85.52	14.48
Sep.	74.33	10.49	84.82	15.18
Oct.	74.66	10.43	85.09	14.91
Nov.	74.56	10.89	85.45	14.55
Dec.	73.90	11.15	85.05	14.95
Total:	74.71	10.59	85.30	14.70
1974				
Jan.	74.18	10.86	85.04	14.96
Feb.	73.49	11.53	85.02	14.98
Preliminary:				
Mar.	73.05	11.57	84.62	15.38
Apr.	73.43	11.33	84.76	15.24

Source: Federal Energy Administration, Petroleum Market Shares: A Progress Report on the Retailing of Gasoline, Washington, D.C., U.S. Government Printing Office, August 6, 1974, p. 7.

independents.[15] There would appear to be little justification for the charge that the independent marketers have been squeezed out of business by the major oil companies.

In June 1974, the Independent Gasoline Marketers' Council made public its own study of market shares in the form of a press release. This study purported to show that the market share of independent nonbranded marketers had fallen sharply between the first quarter of 1972 and the first quarter of 1974.[16] Based on data supplied by IGMC members, it found that the gasoline sales of independents had fallen 17.1 percent while total industry sales rose 0.3 percent during the two year period.

The major problem with this survey is that the IGMC is not representative of all nonbranded independent marketers even though on some occasions it has claimed to speak for this segment of the industry.[17] It consists of 15 of the larger nonbranded independent marketers of gasoline. These marketers account for only 16 percent of the total volume sold through nonbranded independent outlets and less than 2 percent of total gasoline sales. The IGMC also consists of marketers who, when gasoline was in excess supply, generally purchased large volumes on the spot market at distress prices. By contrast, many other marketers, including most nonbranded independents, chose to purchase gasoline from refiners under contract.

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15. The Lundberg data are based on state gasoline tax records which, by themselves, do not indicate gasoline sales to final consumers by the categories of retailers specified in the Act. Lundberg recognized this problem and tried to adjust for it.

16. FEA, Petroleum Market Shares, p. 9; Oil and Gas Journal, March 24, 1975, p. 39.

17. For example, see the testimony of Mr. Ken Catmull on behalf of the Independent Gasoline Marketers Council before the Subcommittee on Government Regulation, Senate Small Business Committee, August 20, 1974, reproduced in 120 Cong. Rec. S15432 (daily ed. August 21, 1974).

Although gasoline purchased under contract cost more, the contract buyer was supposedly protected against shortages like those that occurred in 1973-74. In short, many IGMC members took a high risk gamble, made abnormal profits as long as there were surpluses of gasoline, but then began to hurt when this gamble turned sour. For this reason, it is not surprising that the IGMC marketers lost their share of the market between 1972 and 1974.

In July 1974, Lewin & Associates, Inc. conducted a "quick survey" of nonbranded gasoline stations for FEA.[18] This survey concentrated on the larger nonbranded independent gasoline marketers, including all 15 members of the Independent Gasoline Marketers' Council. 56 companies responded to the survey. The results indicated that, during the first four months of 1974, the independents in the sample experienced a decline in market share of 14.8 percent since the first four months of 1972.

The Lewin survey was stratified into two groups: marketers with monthly sales over 3 million gallons and marketers with monthly sales less than 3 million gallons. The Lewin sample consisted, for the most part, of the same types of independent marketers included in the IGMC survey--nonbranded marketers who have depended heavily on purchases in the spot market. For this reason, the Lewin survey suffers from the same biases as the IGMC survey and, because of these biases, tends to exaggerate the decline in the market share of all independents during the two year period.

Because of this confusion of statistical sources, the Federal Energy Administration decided to undertake its own study of market shares.[19]

18. FEA, Petroleum Market Shares, pp. 11-16.
19. Federal Energy Administration, Petroleum Market Shares: A Report on the Federal Energy Administration Survey of Refiners and Importers of Gasoline, Washington, D.C., August 28, 1974.

The FEA survey adopted as the most appropriate definition of "independent" sales through outlets not owned and operated by the company producing the gasoline.

The results are presented in Table 6. The FEA survey found that during the first five months of 1974 gasoline sales by branded and non-branded independent marketers were 82.7 percent of total sales, compared to 83.4 percent during the first five months of 1972. During the same period, however, the large integrated refiners', or major oil companies', share of gasoline sales through all outlets fell from 74.8 percent to 73.7 percent of the total, with a comparable increase in the small and independent refiners' share of gasoline sales. In general, FEA's survey suggested very little change in market shares during the period.[20] If the independent markets were being squeezed, they were being squeezed by the independent refiners and not the integrated oil companies.

What has happened since mid-1974? On March 4, 1975, FEA issued its first monthly market shares report as required by the Emergency Petroleum Allocation Act. This report was for October and November 1974. The most recently issued report carries the series to May 1975.[21] These monthly reports are based on a continuous sample of 10,000 stations conducted by the Census Bureau. They divide gasoline marketers into three groups: nonbranded independents; branded independents; and refiner/marketers. FEA's newly created series suggests that, for the eight months covered by the data, the market shares of nonbranded independents and

20. The maximum decline in the independent marketers' share occurred between July 1972 and January 1974. This was 4.2 percent, far lower than the IGMC and Lewin estimates.

21. Federal Energy Administration, National Energy Information Center, Petroleum Market Shares, May 1975, p. 5.

TABLE 6

FEA SURVEY OF REFINERS AND IMPORTERS OF GASOLINE
(percent)

Total Sales Through:

Month	Retail Outlets Owned and Operated by Integrated Oil Companies	Other Direct Sales by the Integrated Companies	Branded and Nonbranded Independent Marketers
1972			
Jan.	8.17	8.43	83.40
Feb.	7.81	8.65	83.55
Mar.	7.91	8.66	83.43
Apr.	8.09	8.33	83.57
May	7.65	9.12	83.23
June	7.74	8.37	83.88
July	8.22	6.62	85.16
Aug.	7.88	8.26	83.87
Sep.	7.96	8.23	83.81
Oct.	7.89	8.87	83.25
Nov.	8.02	8.41	83.58
Dec.	9.20	8.02	82.77
1973			
Jan.	8.33	8.08	83.59
Feb.	8.26	8.03	83.71
Mar.	8.12	8.02	83.86
Apr.	8.00	7.99	84.01
May	8.09	8.55	83.36
June	8.75	7.93	83.32
July	8.96	7.29	83.74
Aug.	8.80	7.69	83.52
Sep.	9.37	7.65	82.98
Oct.	9.40	8.28	82.32
Nov.	9.69	8.32	81.98
Dec.	9.81	7.73	82.46
1974			
Jan.	10.06	8.37	81.57
Feb.	9.16	8.40	82.45
Mar.	8.83	8.51	82.66
Apr.	8.54	8.24	83.22
May	8.32	8.38	83.30

Source: Federal Energy Administration, Petroleum Market Shares: A Report on the Federal Energy Administration Survey of Refiners and Importers of Gasoline, Washington, D. C., U.S. Government Printing Office, August 28, 1974, p. 24.

refiner/marketers have increased, while the share of branded independents has decreased. (See Table 7.)

FEA has warned users, correctly, that seasonal variations in market shares should not be confused with long-term trends.[22] As a rule, one would expect the share of branded outlets to peak during the summer months, when tourism is greatest, and to fall during the non-summer months, when tourism is off. Tourists away from home tend to favor nationally known, branded stations accepting credit cards.

FEA's series still failed to silence complaints by some independent marketers of gasoline that their shares were being eroded.[23] For this reason, in 1975 FEA conducted another historical survey of the independent gasoline distributors' market shares.[24] In this survey FEA collected information on gasoline sales from over 300 nonbranded independent marketers. These were defined as marketers having no refining capacity of their own, not controlled by refiners, not leasing their premises from refiners, and not selling under refiner brand names. The more than 300 companies in the sample accounted for about two-thirds of gasoline sales by independent nonbranded marketers.

FEA's latest survey uses the most restrictive definition of the word "independent" yet adopted by the government. It attempts to measure the market share of the "true" independent, the group of marketers including the IGMC membership. It excludes any businessmen selling gasoline under

22. For example, see Petroleum Market Shares, January 4, 1975, p. 3

23. For example, see Oil and Gas Journal, March 24, 1975, p. 39.

24. This survey was completed in the autumn of 1975 but has not yet been released. Draft copies have been circulated under the title, Historical Report on Nonbranded Independent Marketers of Motor Gasoline: 1972 through 1974.

TABLE 7

MARKET SHARES OF GASOLINE SERVICE STATION OPERATORS
1974-1975

(percentage)

Month	Refiner/ Marketers	Nonbranded Independents	Branded Independents
October 1974	13.3	7.4	79.3
November 1974	13.5	8.3	78.2
December 1974	14.0	9.0	76.9
January 1975	15.3	9.1	75.6
February 1975	14.5	9.6	75.9
March 1975	15.1	9.6	75.3
April 1975	14.6	10.2	75.2
May 1975*	14.3	9.9	75.8

*Preliminary

Source: Federal Energy Administration, National Energy Information Center, Petroleum Market Shares, May 1975, p. 5.

a brand name or who happen to lease their stations from a major oil company, even though many of these businessmen are, for all practical purposes, independent agents. They are not employees of the major oil companies. Major brand dealers benefit from the use of a major brand name, credit cards, and other services provided by the major oil companies. However, for this reason, the branded independent gasoline marketer normally pays more for his gasoline than the nonbranded marketer.

The results of FEA's latest survey are summarized in Table 8. In 1973 and early 1974 the market share of the sample firms fell from about 5.2 percent to about 4.5 percent of total gasoline sales. This was during the period when crude oil and product shortages first occurred. As one might expect, these shortages hit hardest the nonbranded segment of the industry. (Some nonbranded distributors have bought heavily on the spot market. By definition, branded dealers have not.) However, by the fourth quarter of 1974 the nonbranded independent marketers had more than restored their 1972 market shares. By then, they accounted for 5.5 percent of total gasoline sales.

This restoration of market shares might reflect the establishment of the mandatory allocation program in early 1974. More likely, it reflects the restoration of surplus production and a spot market for gasoline. Increasingly, the shortages of 1973-74 appear to have been an aberration in what has been a prevailing tendency toward excess production of gasoline in the United States.

Critics of FEA's surveys have argued that they are misleading because the major oil companies have withdrawn the privilege of using their trademarks from many branded independent jobbers and distributors, thus

TABLE 8

RESULTS OF FEA'S 1975 SURVEY
OF SELECTED INDEPENDENT NONBRANDED MARKETERS OF GASOLINE

(percentage of total U.S. gasoline sales)

1972 through 1974

1972	1st quarter	4.96
	2nd quarter	4.98
	3rd quarter	5.14
	4th quarter	5.43
	Annual	5.13
1973	1st quarter	5.22
	2nd quarter	4.31
	3rd quarter	4.08
	4th quarter	4.29
	Annual	4.46
1974	1st quarter	4.42
	2nd quarter	4.59
	3rd quarter	4.85
	4th quarter	5.51
	Annual	4.86

Source: Computed from Federal Energy Administration, Historical Report on Nonbranded Independent Marketers of Motor Gasoline, 1972 through 1974, draft report, 1975, Table 1.

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forcibly converting them from branded to nonbranded independents. In fact, there are relatively few cases of this happening and no evidence that it has happened on an increased scale sufficient to explain the shift in market shares indicated by FEA's latest surveys.[25] Rather, these surveys, if they reflect any long-term trends, reflect the shift in public demand from branded dealers to cut-rate, self-service outlets owned and operated by both independents and major oil companies.[26] Increasingly, the public has been seeking bargains and, with the price spreads that have existed over the past year, some shift in market shares to nonbranded outlets has been inevitable.

Finally, it has been charged that some majors have changed their marketing operations, increasing their sales through secondary brands or nonbranded outlets. As a case in point, Exxon has been accused of driving some of its own independent branded stations from the market by selling lower priced gasoline under the name Alert, a marketing outlet entirely owned and operated by Exxon. However, to assume that this is monopolistic is to assume that Exxon's Alert stations have little or no competition from other companies selling at cut-rate prices. The growth in automated cut-rate service stations owned and operated by the major oil companies is primarily the result of competition from nonbranded retailers and the greater complexity of the automobile.[27] It is competitive, not

25. Based on discussions with a number of independent nonbranded marketers.

26. For further discussion, see Lundberg Letter, October 24, 1975.

27. Because of EPA-mandated exhaust control and other types of equipment that are now standard on newer automobiles, it is increasingly difficult for the neighborhood service station to service automobiles. This has, in turn, encouraged volume sales of gasoline at discount prices as the principal means of competing in the industry.

monopolistic practices, that have resulted in greater direct marketing by the majors through secondary brand and self-service outlets.

In conclusion, FEA's data on market shares show that retail sales of gasoline are not dominated by the major oil companies or any single oil company. Even if the major oil companies were to expand the number of their company-owned and direct operated marketing outlets, they would have a long way to go before becoming the principal marketers of gasoline in the United States. Gasoline sales have been and remain an industry dominated by independent branded and nonbranded marketers.

In short, the evidence does not support the view that the major oil companies, however they may be defined, should be subject to special regulations because of monopolistic tendencies in the marketing of gasoline. To the contrary, the evidence suggests competition in the marketing of gasoline and the presence of a vigorous and thriving independent segment of the industry.

3. REGIONAL CONCENTRATION OF MARKET SHARES IN THE SALE OF GASOLINE

Some proponents of greater federal and state regulation over the oil industry argue that data on national market shares are meaningless. In recent years, the major oil companies have been pulling out, or plan to pull out, of particular regions. Phillips is getting out of New England; Gulf out of the Rocky Mountain area. The result, it is argued, is greater concentration and diminished competition in the industry in certain regions of the country if not in the country as a whole.

This argument can be reduced to the level of absurdity. Only one gasoline station can occupy a lot. By necessity, that station is a monopoly on that lot. One can, in other words, create monopoly by defining a region sufficiently small. Nevertheless, the argument is plausible and should be analyzed. To this end, we focus on the state. We also focus, once again, on sales of gasoline, the refined product in which market concentration has allegedly had the most serious anticompetitive consequences.

To do this, we have reworked data generated by the Lundberg Survey. Table 9 lists the top five gasoline marketers state-by-state in 1973 and compares their market shares with shares for the preceding three years. If the major oil companies are concentrating their gasoline sales in particular regions, data in Table 9 should indicate this. It does not.

Table 10 summarizes Table 9. The data in Table 10 indicate which companies have experienced the largest increases in market shares in particular states. Four of the top five gainers, five of the top ten, and six of the top fifteen are nonbranded independent oil companies. The data do not suggest, in other words, any pronounced tendency for the major oil companies to increase their shares in particular states.

In only six states and the District of Columbia do the sales of major branded dealers exceed 20 percent of the market. Gasoline sales in Alaska are dominated by Socal, Texaco and Union. However, in the last three years Tesoro, an independent, has captured a significant portion of the market. Similarly, Hawaii is dominated by Socal and Shell. Exxon is strongly represented in West Virginia and the District of Columbia, while Sohio is dominant in Ohio and Amoco in North Dakota and South Dakota. Significantly, most of these states are either rural with small dispersed

TABLE 9

STATE-BY-STATE ANNUAL AVERAGE RETAIL MARKET SHARES (1970 to 1973)
(percentage)

STATE	TOP FIVE MARKETERS (1973)	1970	1971	1972	1973	1970 to '73 CHANGE IN % POINTS
ALABAMA	KYSO	14.5	14.1	13.4	13.4	- 1.1
	GULF	9.5	8.9	6.7	9.1	- .4
	SHELL	8.0	7.6	7.5	8.1	+ .1
	TEXACO	6.7	6.6	6.8	6.9	+ .2
	TRIANGLE	6.4	6.3	6.0	5.8	- .6
ALASKA	SOCAL	55.3	49.0	41.4	39.2	-16.1
	TEXACO	16.4	17.4	17.6	13.9	- 2.5
	UNION	21.2	17.2	17.2	20.8	- 1.2
	TESORO	--	5.4	17.3	20.1	+20.1
ARIZONA	SOCAL	15.8	14.6	14.4	14.4	- 1.4
	SHELL	14.0	14.5	14.7	17.0	+ 3.0
	TEXACO	8.6	8.2	7.5	7.6	- 1.0
	EXXON	7.5	7.2	7.0	7.8	+ .3
	UNION	5.6	5.6	5.5	6.9	+ 1.3
ARKANSAS	EXXON	12.8	11.6	11.4	13.8	+ 1.0
	GULF	8.1	7.8	7.8	8.5	+ .4
	TEXACO	8.5	7.8	7.7	7.9	- .6
	MOBIL	7.2	6.3	6.7	6.7	- .5
	TOSCO	0	0	4.7	6.5	+ 6.5
CALIFORNIA	SOCAL	17.5	15.9	16.4	16.6	- .9
	SHELL	16.2	14.8	14.0	15.1	- 1.1
	ARCO	9.5	11.1	10.6	10.6	+ 1.1
	UNION	10.3	10.0	9.1	10.0	- .3
	MOBIL	9.4	9.1	8.9	8.6	- .8
COLORADO	CONOCO	11.4	10.9	10.7	12.3	+ .9
	TEXACO	12.2	12.1	11.6	11.6	- .6
	AMOCO	9.1	9.6	9.2	9.6	+ .5
	PHILLIPS	8.1	7.3	8.1	7.7	- .4
	CHEVRON	4.9	5.0	5.9	6.7	+ 1.8
CONNECTICUT	MOBIL	14.0	14.2	14.1	14.4	- .4
	TEXACO	12.3	11.4	11.2	11.6	- .7
	SHELL	10.2	9.5	9.5	9.7	- .5
	EXXON	8.0	8.0	7.8	8.6	+ .6
	AMOCO	8.1	8.2	8.9	8.6	+ .5
DELAWARE	EXXON	17.6	16.6	16.5	17.8	+ .2
	ARCO	14.0	14.5	14.3	16.0	+ 2.0
	GULF	8.6	7.7	7.8	8.9	+ .3
	GETTY	7.4	8.9	9.0	8.6	+ 1.2
	SUN	8.5	8.5	8.9	8.0	- .5
DISTRICT OF COLUMBIA	EXXON	30.4	29.7	27.6	30.4	0
	AMOCO	18.5	17.4	17.9	17.1	- 1.4
	GULF	13.3	11.9	13.2	14.5	+ 1.2
	TEXACO	9.0	10.7	10.6	9.8	+ .8
	SHELL	6.3	6.3	7.3	7.4	+ 1.1
FLORIDA	KYSO	13.6	12.4	11.9	11.7	- 1.9
	GULF	9.7	9.3	9.2	10.0	+ .3
	SHELL	8.4	8.2	8.2	8.6	+ .2
	TEXACO	7.6	7.4	7.2	7.3	- .3
	AMOCO	7.3	7.0	7.3	7.0	+ .3
GEORGIA	GULF	11.8	11.2	11.8	12.4	+ .6
	CHEVRON	14.1	13.4	12.4	12.3	- 1.8
	TEXACO	7.7	7.3	7.4	7.4	- .3
	AMOCO	7.2	7.3	7.2	6.7	- .5
	SHELL	7.1	6.5	6.2	6.6	- .5
HAWAII	SOCAL	37.0	35.6	30.1	32.0	- 5.0
	SHELL	19.4	18.6	28.4	28.4	+ 9.0
	UNION	18.5	18.3	16.7	16.8	- 1.7
	PHILLIPS	12.2	12.3	11.0	10.5	- 1.7
	TEXACO	9.0	9.5	8.2	7.6	- 1.4
IDAHO	PHILLIPS	8.7	10.3	11.1	9.9	+ 1.2
	CONOCO	9.7	9.3	8.9	9.7	0
	AMOCO	8.1	8.7	9.0	8.9	+ .8
	TEXACO	9.2	8.6	7.8	8.2	- 1.0
	CHEVRON	*	6.0	5.7	6.3	--

STATE	TOP FIVE MARKETERS (1973)	1970	1971	1972	1973	1970 to '73 CHANGE IN % POINTS
ILLINOIS						
	AMOCO	20.0	19.4	19.3	19.1	- .9
	SHELL	10.5	10.2	10.2	10.7	+ .2
	CLARK	5.4	5.5	6.0	6.8	+ 1.4
	TEXACO	6.4	6.9	6.8	6.3	- .1
	MOBIL	5.8	5.5	5.7	5.6	- .2
INDIANA						
	AMOCO	15.0	14.0	13.9	14.1	- .9
	SHELL	10.2	9.3	8.8	9.1	- 1.1
	MARATHON	10.1	10.7	8.7	8.3	- 1.8
	PHILLIPS	4.3	4.5	4.6	7.4	+ 3.1
	SUN	7.2	7.0	6.1	6.2	- 1.0
IOWA						
	AMOCO	17.5	17.2	17.0	18.4	+ .9
	SUN	8.8	8.6	9.2	9.8	+ 1.0
	PHILLIPS	6.2	6.0	6.3	6.0	- .2
	CONOCO	3.7	3.8	4.0	4.3	+ .6
	MOBIL	3.7	4.1	4.0	4.2	+ .5
KANSAS						
	AMOCO	10.6	10.3	11.0	11.9	+ 1.3
	VICKERS	7.0	6.9	6.9	7.2	+ .2
	PHILLIPS	8.6	8.5	7.5	7.0	- 1.6
	MOBIL	6.7	6.7	6.2	6.4	- .3
	DERBY	5.8	6.1	5.4	5.6	- .2
KENTUCKY						
	KYSO	18.2	17.2	16.6	16.4	- 1.8
	ASHLAND	15.3	14.8	14.3	15.6	+ .3
	GULF	10.6	10.0	9.9	10.2	- .4
	SHELL	6.9	6.7	7.0	7.2	+ .3
	TEXACO	8.0	7.9	7.5	6.9	- 1.1
LOUISIANA						
	EXXON	15.7	18.5	19.8	17.5	+ 1.8
	GULF	10.4	10.6	10.7	10.2	- .2
	CONOCO	9.6	9.3	8.2	8.0	- 1.6
	TEXACO	11.9	12.0	10.8	7.3	- 4.6
	SHELL	6.6	7.1	7.6	5.9	- .7
MAINE						
	EXXON	13.3	12.9	12.0	13.7	+ .4
	MOBIL	12.1	11.3	10.8	11.2	- .9
	GULF	10.2	9.6	9.7	11.1	+ .9
	TEXACO	10.1	10.2	9.9	10.0	- .1
	BPOIL	6.2	9.8	11.4	9.4	+ 3.2
MARYLAND						
	EXXON	18.7	17.6	17.4	19.3	+ .7
	AMOCO	9.9	9.9	10.3	9.8	- .1
	SHELL	9.0	8.6	9.1	8.7	- .3
	GULF	7.4	6.9	7.6	7.9	+ .5
	TEXACO	7.6	7.4	8.2	6.4	- 1.2
MASSACHUSETTS						
	MOBIL	13.8	13.6	14.1	14.9	+ 1.1
	TEXACO	9.6	9.7	9.6	9.7	+ .1
	SHELL	9.1	8.9	9.0	9.1	0
	BPOIL	9.3	10.2	10.1	9.0	- .3
	EXXON	7.8	7.5	7.3	8.2	+ .4
MICHIGAN						
	AMOCO	17.2	15.4	14.6	14.5	- 2.7
	SHELL	11.4	9.9	10.2	10.2	- 1.2
	MOBIL	9.5	9.2	8.5	8.1	- 1.4
	SUN	6.1	6.2	6.3	6.2	+ .1
	GULF	8.0	7.2	6.5	6.1	- 1.9
MINNESOTA						
	AMOCO	15.2	16.0	16.5	16.3	+ 1.1
	NORTHWESTERN	6.9	6.9	8.1	9.0	+ 2.1
	MOBIL	7.0	7.3	8.4	8.5	+ 1.5
	PHILLIPS	6.6	6.5	6.4	6.5	- .1
	CONOCO	5.6	5.1	5.1	5.6	0
MISSISSIPPI						
	KYSO	13.1	12.3	13.2	13.2	+ .1
	GULF	9.4	8.4	9.5	9.5	+ .1
	EXXON	5.0	5.8	6.6	7.2	+ 2.2
	TEXACO	7.8	7.4	7.3	7.2	- .6
	SEAGO ENTR	--	--	1.1	6.0	+ 6.0
MISSOURI						
	AMOCO	15.9	15.0	15.1	14.6	- 1.3
	PHILLIPS	10.1	9.2	8.7	8.4	- 1.7
	SHELL	6.2	5.7	5.4	5.7	- .5
	MOBIL	5.7	5.0	4.6	5.1	- .6
	TEXACO	4.7	4.7	4.2	4.5	- .2

STATE	TOP FIVE MARKETERS (1973)	1970	1971	1972	1973	1970 to '73 CHANGE IN % POINTS
MONTANA						
	CONOCO	15.1	14.4	14.4	15.1	0
	TEXACO	13.4	13.3	13.6	12.7	- .7
	CENEX	11.0	9.9	9.7	10.3	- .7
	AMOCO	10.4	10.5	10.2	10.1	- .3
	EXXON	10.9	9.9	9.2	9.6	- 1.3
NEBRASKA						
	AMOCO	10.7	11.3	11.8	12.2	+ 1.5
	PHILLIPS	10.6	10.2	9.2	9.8	- .8
	FARMLAND	9.5	9.1	8.5	8.9	- .6
	MOBIL	8.9	8.7	8.4	8.9	0
	CONOCO	7.9	7.6	7.3	7.9	0
NEVADA						
	SOCAL	19.4	17.8	17.8	17.3	- 2.1
	PHILLIPS	11.3	11.6	11.9	14.2	+ 2.9
	SHELL	12.2	10.7	10.0	11.2	- 1.0
	ARCO	7.7	7.9	9.7	8.8	+ 1.1
	UNION	6.5	6.5	6.1	7.8	+ 1.3
NEW HAMPSHIRE						
	MOBIL	13.1	11.8	11.5	12.4	- .7
	TEXACO	9.9	10.3	10.0	10.1	+ .2
	GULF	10.0	8.7	8.4	9.7	- .3
	EXXON	9.5	9.1	8.4	9.2	- .3
	SHELL	9.1	8.5	8.4	8.9	- .2
NEW JERSEY						
	EXXON	18.7	17.8	16.7	19.4	+ .7
	SUN	9.5	9.2	9.2	8.8	- .7
	HESS	7.5	9.2	9.3	8.6	+ 1.1
	GULF	8.0	6.4	7.2	7.6	- .4
	SHELL	7.5	7.2	6.9	7.0	- .5
NEW MEXICO						
	TEXACO	12.2	12.2	13.2	12.5	+ .3
	CHEVRON	13.8	12.6	12.3	12.2	- 1.4
	PHILLIPS	8.4	8.3	8.2	7.6	- .8
	SHELL	7.5	7.4	7.7	7.5	0
	EXXON	6.4	6.8	5.8	6.3	- .1
NEW YORK						
	MOBIL	19.8	18.7	18.7	19.1	- .7
	TEXACO	10.7	11.0	11.1	10.3	- .4
	SHELL	9.9	8.9	9.1	9.1	- .8
	EXXON	9.1	8.6	9.0	9.0	- .1
	GULF	8.4	6.9	7.6	7.6	- .8
NORTH CAROLINA						
	EXXON	15.4	12.6	14.5	16.8	+ 1.4
	GULF	9.4	9.6	8.0	9.0	- .4
	TEXACO	8.5	9.2	7.8	8.8	+ .3
	SHELL	7.1	6.8	6.5	6.8	- .3
	AMOCO	7.5	7.5	6.5	5.8	- 1.7
NORTH DAKOTA						
	AMOCO	27.4	27.1	26.7	27.2	- .2
	CENEX	17.9	17.9	17.3	18.1	- .2
	MOBIL	12.1	12.3	11.8	10.3	- 1.8
	TEXACO	6.6	6.8	6.8	6.9	+ .3
	PHILLIPS	3.5	3.6	3.8	4.5	+ 1.0
OHIO						
	SOHIO	27.6	26.5	24.7	24.9	- 2.7
	MARATHON	8.6	8.8	7.6	7.6	- 1.0
	ASHLAND	6.9	7.3	7.8	7.4	+ .5
	SHELL	8.0	7.5	7.5	7.2	- .8
	SUN	9.0	8.3	7.8	7.1	- 1.9
OKLAHOMA						
	TEXACO	9.9	10.4	10.8	12.2	+ 2.3
	PHILLIPS	10.9	10.5	9.7	9.6	- 1.3
	CONOCO	9.0	9.0	9.0	8.9	- .1
	CHAMPLIN	6.1	7.0	7.3	7.5	+ 1.4
	SUN	7.6	7.5	7.1	7.2	- .4
OREGON						
	ARCO	14.0	15.4	15.9	16.4	+ 2.4
	SOCAL	15.8	14.6	13.9	14.7	- 1.1
	SHELL	12.1	11.0	10.8	11.7	- .4
	TEXACO	9.1	9.8	10.2	11.0	- 1.9
	UNION	9.6	9.0	8.2	8.5	- 1.1
PENNSYLVANIA						
	ARCO	16.9	16.7	15.8	16.8	- .1
	EXXON	12.5	11.2	10.7	12.6	+ .1
	SUN	10.5	10.5	10.2	9.9	+ .6
	GULF	8.9	8.2	8.2	9.1	+ .2
	TEXACO	7.5	8.0	7.9	8.1	+ .6
RHODE ISLAND						
	MOBIL	12.7	12.7	11.7	12.3	- .4
	TEXACO	11.2	10.3	8.2	11.8	- .6
	BPOIL	9.3	6.2	14.4	10.2	- .9
	GULF	10.5	10.0	9.5	9.1	- 1.4
	SHELL	8.4	8.1	8.3	9.0	+ .6

STATE	TOP FIVE MARKETERS (1973)	1970	1971	1972	1973	1970 to '73 CHANGE IN % POINTS
SOUTH CAROLINA						
	EXXON	16.2	16.2	16.2	18.2	+ 2.0
	GULF	13.6	11.9	11.1	11.6	- 2.0
	SHELL	9.6	8.8	8.6	8.8	- .8
	TEXACO	8.8	8.6	7.8	7.8	- 1.0
	AMOCO	6.4	6.2	6.1	6.0	- .4
SOUTH DAKOTA						
	AMOCO	18.9	18.9	20.5	20.9	+ 2.0
	MOBIL	12.8	12.1	10.9	11.5	- 1.3
	CENEX	8.6	8.4	8.0	7.9	- .7
	TEXACO	6.6	6.8	5.6	6.8	+ .2
	CO OPS	5.4	5.4	5.5	5.6	+ .2
TENNESSEE						
	EXXON	15.5	14.4	13.4	15.4	- .1
	GULF	10.3	9.3	9.5	9.3	- 1.0
	AMOCO	8.0	7.8	7.7	7.6	- .4
	SHELL	8.0	7.6	7.4	7.2	- .8
	CITCO	7.7	8.2	8.3	7.0	- .7
TEXAS						
	EXXON	16.0	15.2	14.3	16.3	+ .3
	TEXACO	15.1	14.6	14.4	14.2	- .9
	GULF	10.4	9.7	9.4	9.9	- .5
	MOBIL	7.6	7.4	7.4	7.7	+ .1
	SHAMROCK	5.2	5.9	6.0	5.9	+ .7
UTAH						
	CHEVRON	14.2	14.4	14.6	15.0	+ .8
	AMOCO	13.2	14.0	13.3	13.8	+ .6
	PHILLIPS	11.5	10.6	10.3	10.2	- 1.3
	HUSKY	13.9	11.1	9.6	8.6	- 5.3
	TEXACO	7.5	7.2	7.4	7.9	+ .4
VERMONT						
	MOBIL	16.9	16.9	16.6	16.5	- .4
	TEXACO	15.1	14.2	13.4	13.5	- 1.6
	GULF	11.6	10.3	9.7	9.7	- 1.9
	EXXON	9.6	9.4	8.7	8.7	- .9
	SHELL	10.0	9.2	8.4	8.4	- 1.6
VIRGINIA						
	EXXON	19.1	18.1	17.2	18.9	- .2
	TEXACO	12.4	12.8	12.3	12.3	- .1
	GULF	8.7	8.4	8.7	9.2	- .5
	SHELL	8.0	7.7	6.9	6.8	- 1.2
	AMOCO	7.3	6.8	6.4	6.5	- .8

STATE	TOP FIVE MARKETERS (1973)	1970	1971	1972	1973	1970 to '73 CHANGE IN % POINTS
WASHINGTON						
	SOCAL	18.8	17.9	14.7	15.8	- 3.0
	ARCO	11.2	12.3	12.4	12.8	+ 1.6
	TEXACO	11.9	13.9	11.6	11.2	- .7
	SHELL	12.5	10.5	11.0	10.8	- 1.7
	UNION	7.8	8.0	8.3	8.9	+ 1.1
WEST VIRGINIA						
	EXXON	21.9	20.9	19.6	20.1	- 1.8
	ASHLAND	11.2	12.4	13.7	16.1	+ 4.9
	GULF	11.5	10.0	10.4	9.9	- 1.6
	TEXACO	7.5	8.0	8.8	8.2	+ .7
	UNION	7.9	8.4	7.7	6.5	- .6
WISCONSIN						
	AMOCO	15.3	14.7	14.2	14.9	- .4
	MOBIL	9.2	8.8	8.4	8.8	- .4
	CLARY	*	*	5.6	6.4	--
	MURPHY	3.6	4.5	5.4	6.1	+ 2.5
	TEXACO	6.0	6.2	5.5	5.3	- .7
WYOMING						
	AMOCO	13.8	13.3	12.8	12.7	- 1.1
	TEXACO	12.1	12.1	12.7	11.7	- .4
	CONOCO	12.9	12.1	11.7	11.2	- 1.7
	LITTLE AMERICA	4.7	6.5	7.1	9.5	+ 4.8
	HUSKY	7.0	7.0	7.2	6.5	- .5

Source: **Annual average market shares, drawn from Lundberg Survey Data, National Petroleum News, various editions.**

TABLE 10

THE TOP FIFTEEN INCREASES IN MARKET SHARES ON THE STATE LEVEL
(1970-1973)

Rank	Share	State	Increase in Annual Average Market Shares (percentage points)
1	Tesoro	Alaska	20.1
2	Shell	Hawaii	9.0
3	Tosco	Arkansas	6.5
4	Seago Entr.	Mississippi	6.0
5	Little America	Wyoming	4.8
6	BP Oil	Maine	3.2
7	Shell	Arizona	3.0
8	Phillips	Nevada	2.9
9	Murphy	Wisconsin	2.5
10	ARCO	Oregon	2.4
11	Texaco	Oklahoma	2.3
12	Northwestern	Minnesota	2.1
13	ARCO	Delaware	2.0
14	Exxon	South Carolina	2.0
15	Amoco	South Dakota	2.0

Source: Table 9.

populations or are not contiguous with the lower 48 states. The District of Columbia is a concentrated urban area with competition from nearby sections of Maryland and Virginia. The remaining 44 states have even less concentrated markets for gasoline. In short, the charge that major companies dominate, or have increased their domination, in particular regions is not supported by the facts.

4. VERTICAL INTEGRATION IN THE PETROLEUM INDUSTRY

One charge frequently leveled against the oil industry is that it is anticompetitive, not because it is concentrated, but because it is vertically integrated. Critics argue that because some companies in the industry operate at all levels--production, transportation, refining, and marketing--they are able to control the market to the detriment of both their nonintegrated competitors and American consumers. The result, according to these critics, has been a "substantial misallocation of society's scarce resources and . . . the imposition of substantial costs upon American consumers and taxpayers."[28]

Because of this allegation, Congress is now considering various measures that would require vertical divestiture, that is, the separation of production, refining, transportation and marketing in the oil industry. On October 8, by a vote of 45-54, the Senate rejected an amendment to the Natural Gas Emergency Act that would have prohibited any major producer, refiner or transporter from owning or controlling operations at any other

28. Federal Trade Commission Staff, Complaint Counsel's Prediscovery Statement, In the Matter of Exxon et al., Docket No. 8934, February 1974, p. 95.

level in the industry.[29] Two weeks later, by another close vote, the Senate rejected an attempt to prohibit major producers from having any interest in refining, transportation or marketing.[30] Some Senators voted against these amendments because they had not been formally considered and reported by the appropriate committee. Once this is done, the vote for divestiture may be higher. For this reason, supporters of divestiture in Congress have announced that they will continue to hold hearings and will bring a bill to a vote later in the 94th Congress.

Several divestiture bills have been introduced in the Congress. The most important is S. 2387, the Petroleum Industry Competition Act of 1975. According to its proponents, S. 2387 would facilitate the creation and maintenance of competition in the petroleum industry by requiring divorcement (separation) and divestiture (disinvestment) of assets and interests of the vertically-integrated, major petroleum companies. S. 2387 is supposed to introduce competition into the petroleum industry by eliminating vertical integration for the largest 20 major oil companies. Under the bill, a major operator would be allowed to engage in only one of the four segments of the industry: production, transportation, refining, or marketing. Or it would be allowed to split itself into smaller integrated units each falling under the size limits set by the bill.

Under S. 2387, major operators are defined by sector as follows:

(1) A "major producer" is a company producing 36.5 million barrels of crude oil or 200 billion cubic feet of natural gas per year.

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29. 121 Cong. Rec. S17864 (daily ed. Oct. 8, 1975).
30. 121 Cong. Rec. S18588 (daily ed. Oct. 22, 1975).

(2) A "major refiner" is a company refining 75 million barrels of oil per year.

(3) A "major marketer" is a company that markets 110 million barrels of refined petroleum products per year.

Only the largest 20 oil companies would be affected by these size limits. However, all petroleum transportation and pipeline companies are subject to divestiture.

Within three years after enactment, the bill prohibits:

(1) Any major producer from owning any interest in transportation, refining, or marketing;

(2) Any major refiner from owning any interest in production, transportation and marketing;

(3) Any major marketer from owning any interest in production or transportation;

(4) Any petroleum transporter from owning any interest in production, refining, or marketing.

Significantly, major marketers would be permitted to retain or acquire refining interests. In other words, S. 2387 is aimed at breaking up the major producer-transporter-refiner linkage and not the major marketer-refiner linkage.

According to proponents of S. 2387, the restructuring of the petroleum industry is necessary for a number of reasons. First, it is alleged that divestiture would increase competition at each and every stage of operation, and between stages, by creating many new companies, all of them competing with one another at arm's length. Second, proponents contend that this legislation would also decrease the potential for major company

abuse of market power through joint ventures and exchange agreements. Third, divestiture would end major company ownership and control over crude and product pipelines and make it impossible for the major companies to squeeze independent producers, refiners, and marketers through control of these lines. Finally, proponents claim that S. 2387 is a necessary accompaniment to the decontrol of oil pricing and distribution. Without price controls and an allocation and entitlements program to protect small and independent segments of the industry, it is argued, these segments would very soon be driven out of business by the majors. Given their size as well as cooperative and interdependent behavior the majors would, upon decontrol, have the power to administer prices to their own advantage.[31]

These are serious charges. If they are true, then one can argue that the industry should be restructured through divestiture. But if they are false, and divestiture is still ordered, the consequences could be extremely serious. Among other things, consideration of divestiture alone is a disincentive to industry investment at a time when expansion of industry capacity is necessary to counter foreign supply interruptions and higher world oil prices. In this section we examine the arguments advanced in support of divestiture of the oil industry. We close by considering some of the possible effects of vertical divestiture on the industry and the economy.

Two basic arguments have been advanced in support of the position that vertical integration is anticompetitive. First, to the extent that

31. See, for example, "Facts About Vertical Divestiture in the Oil Industry," issued jointly by Senators Hart (Mich.), Hart (Col.), Nelson and Abourezk, September 19, 1975.

any one segment of a vertically integrated industry is highly concentrated, control of that segment can create control of other, relatively nonconcentrated segments of that industry. For example, even though the refining industry may not be overly concentrated, the fact that relatively few companies control crude oil pipelines may give the integrated oil companies unfair market power vis-a-vis independent refiners.

This argument has been used in support of divestiture of the oil industry most recently in a report by the staff of the Senate Antitrust and Monopoly Subcommittee. In this report, the subcommittee's staff states:

> It is also important to recognize here that it is almost impossible to assess in isolation the degree of competition at any one level of the petroleum industry. The extent of cooperation or interdependence at any one level is affected by the community of interests that exists at the other levels. Regardless of the apparent structure at any one level, the dominance of the industry by the vertically integrated firms reduces competition at all levels to a sort of lowest common denominator. Each cooperative device at each level adds to the total effect.[32]

While correct in theory, it is difficult to support this argument as it applies to the integrated oil companies. We have already shown in Section 1 that each segment of the oil industry is relatively unconcentrated. Therefore, it would appear unlikely, on the surface at least, that the "lowest common denominator" is low enough to permit anticompetitive behavior. The exception is the pipelines which have, for years, been treated as common carriers under both state and federal laws. If the integrated oil companies are using their shares in the ownership of pipelines to stifle competition downstream, the appropriate and less extreme remedy would be to strengthen existing laws governing pipelines, and not to

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32. 121 Cong. Rec., S16406 (daily ed., Sept. 22, 1975).

restructure fundamentally the entire oil industry. The pipelines are considered separately in a later section of this paper. Proponents of divestiture also argue that the various segments of the industry are not as unconcentrated as concentration ratios would seem to imply because of such widely used practices as joint ventures and exchange agreements. These practices are also considered in later sections.

A second basic argument against vertical integration in the oil industry is that the profits of one segment of a vertically integrated company can be used to subsidize other segments. In particular, the historic profit center of vertically integrated oil companies has been production. Because profits have been concentrated at the production level, integrated oil companies have in effect been able to put independent refiners and marketers at a severe competitive disadvantage.

This criticism of vertical integration has been developed by two sources: the Federal Trade Commission staff[33] and Fred Allvine and James Patterson.[34] The FTC staff is now prosecuting an antitrust case against the eight largest U.S. oil companies. According to press reports, one of the remedies contemplated by the staff is divestiture. Allvine and Patterson have also examined the structure of the industry, have found it anticompetitive and have recommended divestiture.

Both Allvine and Patterson and the FTC staff begin their analyses of vertical integration by examining the relationship between crude

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33. FTC Staff, Preliminary Report; See, also, FTC Staff, Prediscovery Statement.

34. Allvine and Patterson, Highway Robbery: An Analysis of the Gasoline Crisis; and statement of James Patterson, Hearings on the Industrial Reorganization Act: the Energy Industry before the Subcommittee on Antitrust and Monopoly of the Senate Committee on the Judiciary, 93d Cong., 2d Sess., pt. 8, 1974, pp. 6075-6103.

production and refining. And both, in turn, rely on the work of DeChazeau and Kahn.[35] According to DeChazeau and Kahn, refiners with a sufficient supply of captive crude production are able to squeeze the profit margins of independent refiners and marketers. Their argument is as follows: A firm with crude production equal to its refinery output will be indifferent to the price of crude oil for any given product price because its total revenues and profits will remain the same. But because of the depletion allowance, a greater after tax profit can be realized by minimizing downstream earnings while maximizing crude production earnings. Although few refiners are completely self-sufficient in crude, beyond a certain degree of self-sufficiency, it is argued, these refiners benefit from higher crude prices even if product prices remain unchanged. The result has been an artificially high crude price and an artificially low return on refining and marketing. This, in turn, has discouraged entry into the refining and marketing sector by nonintegrated firms. It has also made it difficult for existing nonintegrated refiners to survive.

The FTC staff and Allvine and Patterson build on this foundation by analyzing the effect of oil import quotas on refiners.[36] According to both, the import quotas acted as a further barrier to entry in refining by restricting the supply of crude oil available to a potential entrant. The quotas also squeezed independent refiners' profit margins by raising the price of domestic crude. The FTC staff also argues that oil import

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35. Melvin G. DeChazeau and Alfred E. Kahn, Integration and Competition in the Petroleum Industry, New Haven, Conn., Yale University, 1959.

36. Quotas were imposed in March 1959 by Presidential Proclamation 3279, 3 C.F.R. (1959-1963 Comp.) 11. They were lifted by Proclamation 4210 3A C.F.R. 60 (1973 Comp.).

quotas benefitted integrated companies in other ways. Because import rights went only to existing firms, the majors were able to purchase oil at the lower world price, refine this oil, and then sell the products at the higher domestic price. In addition, the major oil companies were able to realize profits through trading for the import rights of inland domestic refiners. Often inland refiners were unable to refine imported oil and had no choice but to trade with the larger companies.[37] These advantages are why, according to Allvine and Patterson, the major oil companies were able to convince the government to impose quotas in the beginning. It also explains why these companies vigorously opposed the elimination of the quotas when this was proposed by the Cabinet Task Force in 1969.[38]

Both Allvine and Patterson and the FTC staff also argue that, because of recent changes in the world crude market, integrated companies are now shifting their interests to the marketing sector of the industry. To protect and enhance their position in marketing they are denying crude oil supplies to independent refiners who sell to independent marketers.[39] Finally, both suggest that the shortages of refined products that occurred prior to the Arab embargo were contrived by the major companies in order to drive the independents from the marketplace.[40]

Where do we begin? Perhaps, after reciting such a long list of alleged abuses resulting from vertical integration, we should start by

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37. FTC Staff, Preliminary Report, p. 15.
38. Allvine and Patterson, p. 29.
39. FTC Staff, Prediscovery Statement, pp. 88 and 93; Allvine and Patterson, p. 30.
40. FTC Staff, Prediscovery Statement, p. 87; Allvine and Patterson, pp. 163-205.

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reminding the reader of two things: (1) vertical integration per se is not illegal and (2) companies may be vertically integrated for non-predatory reasons.

In the 1920 U.S. Steel Case the Supreme Court held that, "A vertical combination actuated by considerations of efficiency and marketing and not by a desire to create a monopoly is not in violation of the Sherman Act."[41] More recently, the Court has said that, "The legality of vertical integration under the Sherman Act turns on (1) the purpose or intent with which it was conceived, or (2) the power it creates and the attendant purpose or intent."[42] In other words, structure alone is not enough. There must be either actual anticompetitive behavior or the power to engage in anticompetitive behavior coupled with the intent to exercise it.

McLean and Haigh have suggested several considerations that might motivate an oil company to integrate vertically.[43] Because profits at the different levels of the industry are not closely related, they argue, vertical integration is one way of diversifying investment and stabilizing earnings. Furthermore, vertical integration reduces the risks associated with investment in large scale capital facilities like refineries by assuring inputs of crude oil and markets for refined products. Finally, economies of management may be realized if operations in the different sectors of the industry can be coordinated.

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41. United States v. United States Steel Corp. et al., 251 U.S. 417 (1920).
42. United States v. Paramount Pictures, Inc., 334 U.S. 131 (1948).
43. John McLean and Robert Haigh, The Growth of the Integrated Oil Companies, Cambridge, Mass., Harvard University Press, 1954.

Mitchell has added still another reason that is especially relevant today: uncertainty created by federal price controls.[44] One way of avoiding the effects of price controls, Mitchell argues, is through vertical integration. Indeed, it appears that several firms, including Dow Chemical, General Motors, and Regis Paper, are integrating into crude oil and natural gas production to avoid shortages resulting from existing federal regulations.

Although in some ways vertical integration may be socially beneficial, its advantages may not outweigh the anticompetitive behavior that allegedly follows from it. For this reason, we must consider the various criticisms of vertical integration in greater depth.

We begin with the DeChazeau and Kahn thesis, later adopted by Allvine and Patterson, that the depletion allowance favors integrated refiners over nonintegrated refiners. The short answer to this argument is that it is now irrelevant. Title V of the Tax Reduction Act of 1975 permanently repealed the depletion allowance for all integrated oil firms.[45] In fact, by retaining it for smaller, nonintegrated firms, the Act may encourage the divestiture of some crude oil production.

However, DeChazeau and Kahn and Allvine and Patterson wrote their books and the FTC staff brought its complaint against the majors before depletion was repealed. Was their argument correct prior to 1975? At

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44. Statement of Edward Mitchell, Hearings on the Industrial Reorganization Act: the Energy Industry, pp. 6065-6066.

45. P.L. 94-12. See Stephen L. McDonald, "Taxation System and Market Distortion," Kalter and Vogley, eds., Energy Supply and Government Policy, forthcoming, for a discussion of the Act and its effects on oil production.

issue is the degree of self-sufficiency in crude oil necessary for an integrated refiner to benefit from increases in the price of crude oil. The Commission staff claimed that the threshold level was 40 percent.[46] Richard Mancke of Tufts University argues, we believe correctly, that the figure was actually 93 percent.[47] Table 11 presents the Commission staff's own estimates of domestic crude oil self-sufficiency of the 17 leading refiners in 1969. Only Getty, a firm not charged with antitrust violations by the FTC staff, meets the 93 percent test. In other words, if the integrated companies have deliberately concentrated their profits at the production level, as has been alleged, they have been operating in a way contrary to their own economic self-interest.[48]

Critics of vertical integration have also argued that oil import quotas contributed to the squeeze on independent refiners. Once again, the short answer is that the quotas have been abolished and the argument is now irrelevant.[49] But once again we consider in greater detail the arguments advanced concerning the effect of the quota system on independent refiners.

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46. FTC Staff, Preliminary Report, p. 17.

47. Richard Mancke, The Failure of U.S. Energy Policy, New York, Columbia University Press, 1974, pp. 173-4.

48. For a somewhat different analysis, with similar implications for the validity of this argument, see Edward W. Erickson, Stephen W. Millsaps, and Robert M. Spann, "Oil Supply and Tax Incentives," Okun and Perry (eds.), Brookings Papers on Economic Activity 1974, Vol. 2, Washington, D.C., The Brookings Institution, pp. 454-6.

49. The FTC Administrative Law Judge assigned to the FTC staff's case has recognized that depletion repeal and the abolition of the quotas have changed the case in fundamental ways and, for this reason, has recommended that the case be dropped. However, the Commission, on a 3-1 vote, has rejected this advice and directed that the prosecution continue. See Oil and Gas Journal, October 27, 1975, p. 50.

TABLE 11

The FTC's Estimates of the Domestic Self-Sufficiency of 17 Leading Refiners in 1969

Company	Self-Sufficiency (percent of runs to stills)
Standard (New Jersey)	87.4
Standard (Indiana)	50.5 (d)
Texaco	81.0 (e)
Shell	62.1
Standard (California)	68.8 (d)
Mobil	42.2 (a)
Gulf	87.6 (d,c)
Arco	64.9
Sun	46.7 (b)
Union	64.3 (d)
Standard (Ohio)	6.7 (d)
Phillips	51.8 (d)
Ashland*	12.6
Continental	64.0
Cities Service	49.9
Getty**	137.2 (c)
Marathon	88.1

(a) Other liquids included in refinery runs
(b) Crude production includes Canada
(c) Excludes crude processed for company's account
(d) Other liquids included in crude production
(e) Estimated

*Data cover the twelve months to September 30, 1969.
**Includes subsidiaries.

Source: Preliminary Federal Trade Commission Staff Report on Its Investigation of the Petroleum Industry, p. 20, based on estimates obtained from Kerr, Rice & Co., Engineers.

Without doubt, the quotas restricted the supply of foreign crude available to U.S. refiners. This was their purpose. But it is not clear that the quotas squeezed the profit margins of independent refiners. In fact, the evidence suggests just the opposite, that the quotas were, in effect, a subsidy to small refiners, most of them nonintegrated.

This is because the right to import oil was allocated by means of the sliding scale. The sliding scale worked like a graduated income tax in reverse: the smaller the refiner, the larger the allocation. Table 12 compares quota allocations over the period 1959 to 1972. In 1959 a small refiner with a 10,000 bpd input received a quota of 1,140 barrels. By 1972 the quota had increased to 2,170. The right to import oil during the sixties was worth about \$1.25 a barrel. Thus, a refiner with a 10,000 bpd input received a subsidy of \$520,125 in 1959 and \$990,062 in 1972.

Some small refiners actually made most of their profits from sales of import tickets prior to 1973. What caused grief to many small refiners was not vertical integration in the oil industry but the rise in the price of foreign oil relative to domestic oil after 1972. This, in effect, depressed the price of import tickets because it was no longer as profitable for the integrated refiners to run foreign rather than domestic crude. In short, it is hard to support the claim that the quota system squeezed the profit margins of small, nonintegrated refiners. What is more plausible is that the subsidy provided by the quotas kept some small, noneconomic refineries in business throughout the 1960's and early 1970's. This is supported by the testimony of the small refiners themselves.[50]

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50. See, for example, Cabinet Task Force on Oil Import Control, The Oil Import Question, Washington, D.C., U.S. Government Printing Office, 1970, p. 261; See also statement by Edwin Dryer on behalf of Independent Refiners Association of America, Hearings on the President's Energy Message and S. 1570 before the Senate Committee on Interior and Insular Affairs, 93d Cong., 1st Sess., 1973, p. 541.

TABLE 12

SLIDING SCALE ALLOCATIONS OF IMPORT QUOTAS
FOR VARIOUS PERIODS: 1959-1972*

(Percentage of Refinery Inputs)

Average bpd Input	Jul-Dec 1959	Jan-Jun 1964	Jan-Dec 1966	Jan-Dec 1970	Jan-Dec 1972
0-10,000	11.4	14.0	18.0	19.5	21.7
10,000-30,000	10.0	11.9	11.4	11.0	13.0
30,000-100,000	8.0	9.3	8.9	7.0	7.6
100,000 plus	6.0	5.5	5.3	3.0	3.8

*Sources: Edward Shaffer, The Oil Import Program of the United States, New York, Praeger, 1968, p. 166; Kenneth Dam, "Implementation of Import Quotas: The Case of Oil," 14 Journal of Law and Economics 1, 1971; 1 Oil Import Digest A29 (National Petroleum Refiners Association). Data are for refiners located in Districts I-IV. For 1959, the figures are approximations because allocations were then made on the basis of nine categories of refiners.

About 60 percent of the allocations made under the import quota system went to refiners with inputs greater than 70,000 bpd. Most of these refiners were integrated. Therefore, it is true, as the FTC argues, that most of the economic rents accruing from the quotas were received by large, integrated companies. But the FTC staff seems to imply that, because of their market power, the majors were able to realize some of the rents that would have accrued to the small refiners as well. Once again, this was not the case. After an initial period of adjustment when the quotas were first imposed, "All quota holders became assured of a relatively uniform premium in dollars and cents value for each barrel of oil exchanged."[51] In fact, for many years the government actually came to use the ticket price as a yardstick for determining whether to increase or reduce quota allocations. Stability of the ticket price paid to small refiners at or around $1.25 per barrel was, in effect, _the_ U.S. import policy.

Given this misunderstanding of the operations of the quota system, it is not surprising that the underlying motives of the companies involved have also been misunderstood. For example, although Allvine and Patterson assert that integrated companies were behind the push for import controls, the record is quite clear that the five largest international firms--Gulf, Mobil, Socal, Exxon and Texaco--all vigorously opposed the imposition of quota restrictions.[52] These companies had all made substantial investments

51. Material Relating to the Testimony of Professor Paul Homan, _Hearings on Governmental Intervention in the Market Mechanism Before the Subcommittee on Antitrust and Monopoly of the Senate Judiciary Committee_, 91st Cong., 1st Sess., pt. 1, 1969, p. 425.

52. See Walter Mead, "Petroleum: An Unregulated Industry?" Kalter and Vogley, eds., _Energy Supply and Government Policy_, forthcoming. A good discussion of the politics of the imposition of import controls is in David M. Olson, _The Government Relations Programs of the American Petroleum Institute and the IPAA: A Comparative Study_, unpublished Ph.D. dissertation, Univ. of California, 1962, Chapter 3.

in overseas crude production and had no desire to see access to the American market curtailed.

It is true that some of these companies opposed the lifting of import restrictions in 1969, as recommended by the Cabinet Task Force majority. But one can suggest many reasons for this stand besides a desire to harm independent refiners. The companies had now made sizeable investments in offshore and Alaskan oil. Lifting import restrictions might reduce the value of these investments. Further, support for the quota system insured good relations with small although politically powerful domestic producers. Perhaps most important, the Cabinet Task Force billed its proposals as a way of lowering domestic oil prices.[53] With this objective, few domestic oil companies--integrated or nonintegrated--were likely to support the Task Force's conclusions and recommendations.

It is difficult to assess the charges of widespread denial of supply to independent markets because they are so unspecific. But one thing does bear mentioning. Of the seven independent marketers that Allvine and Patterson claim were cut-off from supplies by integrated firms, none was directly supplied by an integrated company.[54] Instead, most of these companies had, in the past, bought product on the spot market at distress prices. This gave them a strong competitive position as long as there was excess refining capacity. During the early 1970's this surplus disappeared, primarily because of actions by federal, state and local governments. When shortages

53. See, for example, William Wyant, "The Consumer Be Damned," New Republic, March 7, 1970, pp. 11-12; David Francis, " 'Good Guys' Gunned Down," Christian Science Monitor, March 9, 1970.

54. Allvine and Patterson, pp. 171-180.

occurred, these firms were the first to feel them. Suppliers will always favor their contract customers. In fact, this is why long term supply contracts are executed.

One reason why independent refiners were unable to obtain crude oil in 1973, aside from the loss of import ticket value, was the Cost of Living Council's Special Rule Number 1. Issued on March 6, 1973, this rule was designed to arrest the substantial rise in oil prices that occurred in early 1973 by restricting the large integrated companies to certain weighted average price increases over base period levels for all of their products. If the companies exceeded these increases they would trigger profit margin limitations that, in effect, would have rolled back the prices of their domestic sales.

Many of the integrated companies were willing to swap crude with independent refiners, but at prices that reflected its replacement cost, i.e., the substantially higher prices for imported oil. But this would have used up a significant part of the weighted average price increases allowed by Special Rule Number 1. Instead, the integrated companies chose to let the independent refiners fend for themselves. Because of the inflexibility of the Cost of Living Council's rules, they really had little other choice in the matter. The problem in a nutshell was that the integrated firms made very little return on the sale of crude oil to independent refiners. They were, for the most part, middlemen. For this reason, when Special Rule Number 1 was promulgated, the majors had an incentive to abandon the small refiners they had previously supplied.

Parenthetically, Special Rule Number 1 encouraged similar behavior by the integrated companies toward independent distributors of propane. Some

propane is produced in refineries. However, most is a by-product of the production of natural gas. Traditionally, the integrated companies have purchased propane from producers, combined it with propane produced in their own refineries, and have then sold it to distributors who, in turn, sell it to consumers. In 1973, the price of propane rose sharply, largely because of growing shortages of natural gas. (Propane is a close substitute for natural gas in many uses.) Here, too, the integrated oil companies were actually penalized by Special Rule Number 1 if they continued in their traditional role as middlemen supplying independent distributors of propane. Some of the companies ceased acting as middlemen and, as a result, traditional consumers of propane, such as farmers and low-income households, were faced with severe shortages and disruption in their normal sources of supply.[55]

The majors received the blame. The real culprit, however, was the Cost of Living Council. Because of Special Rule Number 1, many independent refiners and propane consumers became strong advocates of mandatory allocation of oil.

Allvine and Patterson also discuss how in 1972 and 1973 price controls on No. 2 fuel oil created potential home heating oil shortages in the Nation.[56] They argue that the integrated companies deliberately refrained from petitioning the Price Commission for an increase in No. 2 fuel oil

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55. See William A. Johnson, "The Impact of Price Controls on the Oil Industry," Gary Eppen, ed., Energy: The Policy Issues, Chicago, University of Chicago Press, 1975. See also James C. Langdon, Jr., "FEA Price Controls for Crude Oil and Refined Petroleum Products," 26th Oil & Gas Inst., Matthew Bender, 1975.

56. Allvine and Patterson, pp. 165-204.

prices in order to insure a shortage and thus put a squeeze on independents. The truth, once again, is quite different. A history of oil price controls prepared by a former Cost of Living Council staff member reports that:

> In the last quarter (of 1972), industry pressure increased steadily on the Price Commission to be receptive should refiners seek authorization to raise product prices, especially for home heating oil . . . The Price Commission, however, was not swayed and assured refiners that if formal application (prenotification) was made for increases, even if they were cost justified, the increases would not be allowed without first holding public hearings on the whole question of oil pricing. This was a proceeding that promised to be lengthy and of decidedly negative public relations value to the companies. The Price Commission was not without support in its stand. New England Congressmen, worried about the potential shortage of heating oil, were demanding tight controls on home heating oil prices and had extracted a promise from the Administration that hearings would indeed be held before heating oil prices were allowed to go up.[57]

In short, the arguments by Allvine and Patterson and the FTC staff against vertical integration of the oil industry and in support of divestiture are either irrelevant, outdated, or wrong.

Let us suppose that the companies are ordered to divest themselves of their operations in more than one sector of the industry. What might be the results of such an order? First, divestiture may well increase U.S. dependence on foreign oil and therefore U.S. vulnerability to another oil embargo. The U.S. is now and will likely continue to be for at least

57. Department of the Treasury, Office of Economic Stabilization, Historical Working Papers on the Economic Stabilization Program, History of Petroleum Price Controls, Washington, D.C., U.S. Government Printing Office, 1974, pp. 1236-7, (parentheses supplied). For earlier examples of political pressures brought to bear to keep heating oil prices low see "Watchdogs Bark at Oil Prices," Business Week, August 31, 1968; "Humble Says Fuel Oil Prices Not Predatory," Oil and Gas Journal, October 26, 1970.

the next decade moderately dependent on foreign oil. Neither the North Slope, the outer continental shelf, nor Project Independence is going to make the U.S. self-sufficient in petroleum, particularly in the face of an economic recovery. In this situation the relevant question may be: Do we or do we not prefer the large international majors to continue their close working relationship with the United States? During the 1973 embargo, the international oil companies followed a policy of "equal suffering." In effect, they required nations deemed "friendly" by the Arabs, such as France, Spain and the United Kingdom, to share some of the shortages intended primarily for the United States.[58] A major reason for this (although not the only reason) was the substantial downstream investment by the international oil companies in the United States. Integration gave the majors an incentive to supply the United States with more crude oil than the Arab nations would have allowed had their embargo been fully effective.[59]

It is at least worth pondering whether the multinational companies would continue in their protective role toward U.S. downstream activities in another embargo if forced to choose between production or downstream operations. Indeed, if faced with divestiture, what might the majors give up?

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58. U.S. Senate, Committee on Foreign Relations, Multinational Oil Corporations and U.S. Foreign Policy, 93d Cong., 2d Sess., January 1975; see, also, Robert B. Stobaugh, "The Oil Companies in the Crisis," Daedalus, Fall, 1975, pp. 192-198.

59. The principal means by which the companies shared the shortage during the embargo involved swapping non-Arab oil destined for "friendly" or "neutral" nations for Arab oil normally destined for the United States. At the onset of the embargo, the Treasury Department estimated that a fully effective embargo would have denied the United States about 2.8 million barrels per day. In fact, at worst, the shortage reached only half this amount.

Those with significant foreign operations may give up their domestic operations.[60]

In fact, with divestiture a common interest between the majors and OPEC might be forged in which the companies decide that their future interest and perhaps even their future survival depend upon cooperation with producers outside the United States. Some majors may decide to become marketing outlets for OPEC oil in the United States and Europe. Recent moves by OPEC members to reduce equity participation in production by the major companies have had the effect of divorcing company from producing country interests. Divestiture in the United States may actually help effect a reconciliation. The combined effect of the major oil companies and the OPEC cartel would be formidable.

At the production level, we may witness even more joint ventures and greater cooperation between newly divorced producers of crude oil. With their equity base and cash flow greatly diminished, even previously small investments may, because of risk, become too costly to bear alone. Growth in the size of companies engaged in exploration and greater concentration in new production would help to offset the greater risks inherent in exploration and development than exist in other segments of the industry.

At the transportation level, divestiture would require new "arm's length" relationships between producers and pipelines. This would almost certainly impose higher costs on consumers. Pipelines are expensive and economic only when they are run at or near capacity. Given that pipelines are now heavily regulated, and given that pipeline operations and low profits will no longer be subsidized by production, the government will

60. S. 2387, in its present form, is ambiguous in its treatment of the foreign holdings of U.S. integrated oil companies.

probably have to raise pipeline rates or face future shortages in pipeline capacity.

Greater concentration as a result of divorcement seems less likely in refining than in other segments of the industry. Most refineries are built to optimum capacity and technology for the crude they use and the market they serve. The problem in the refining sector is inadequate profitability. Many refineries are now actually operating at a loss. Divorcement will require higher rates of return and, in general, higher refined product prices. Moreover, with the movement of refineries abroad and with OPEC countries already planning to increase their own refining capacity, it is unlikely that divestiture would bring with it a large increase in U.S. refining capacity. Divestiture may, in fact, encourage expatriation of U.S. refining capacity and, in this way, undermine the beneficial effects of the 1973 changes in the oil import program.[61] In other words, the United States may be damned by divestiture one way or the other. If foreign holdings are included in a divestiture order, some companies may divest their domestic operations; if they are not, they would have an incentive to shift their new investments, particularly in refining, to foreign countries in order to circumvent the divestiture ruling.

Marketing is now a highly competitive sector of the industry. Its competitiveness may also be affected adversely by divestiture. Over the past

61. By imposing higher fees on refined products than on crude oil, the April 1973 changes sought to reverse the trend toward building refineries outside the United States. See Statement by William E. Simon, Deputy Secretary of the Treasury on the Oil Import Program, April 18, 1973, reprinted in Hearings on the Energy Conservation and Conversion Act of 1975 Before the Senate Committee on Finance, 94th Cong., 1st Sess., pt. 1, pp. 309-312.

decade independent marketers have gained a growing share of the market at the expense of major branded outlets. One reason for this has been an almost chronic excess refining capacity which has, in turn, created a spot market for gasoline and other refined products. With the exception of 1973-74, excess capacity has been the prevailing state in the industry. Under divestiture the refining industry would have to become profitable on its own. As a result, this excess capacity would probably disappear.

Marketing is also relatively depressed. After divestiture, it would have to become profitable in and of itself. It now seems clear that the industry will have to move toward higher volume sales. Divestiture would probably give further impetus to greater concentration in marketing. It may well be the catalyst that speeds the creation of a relatively few high volume outlets and the demise of many small jobbers and marketers.

Existing high volume independent jobbers would be in the best position to buy up major oil company marketing operations. S. 2387 would actually permit these jobbers to enlarge and integrate backward into refining. With this bonus, the marketing segment of the industry may quickly become dominated by giant semi-integrated companies. Once the major company umbrella is removed from the smaller branded and nonbranded marketers who are affiliated with the majors, these marketers may find themselves either absorbed into new marketing conglomerates or reduced to a position in which they cannot compete effectively.

Branded jobbers and major oil company lessees, especially, are likely to be hardest hit by divestiture. They would lose the benefits of credit cards, advertising and other services provided by major oil company suppliers.

Most importantly, they would lose an assured source of supply. Supplier relationships built up over many years would be destroyed.

Underlying the argument throughout this section is a prospect ignored by critics of vertical integration of the oil industry: Without the major integrated companies there could be rather significant horizontal mergers and greater concentration in all four segments of the industry. No one knows how much concentration would occur after vertical divestiture. However, it is widely recognized that the majors are now restrained from excessive growth because they fear existing antitrust laws. For this reason, integration has in a very real sense been an alternative to concentration and, in this way, has actually provided protection for many small and independent companies in the industry.

Some critics of divestiture argue that it would disrupt capital markets and almost certainly depress the prices of oil company securities, in this way reducing the assets of hundreds of thousands of industry shareholders. On the other hand, supporters argue that the larger integrated oil companies would not have to sell off shares if ordered to divest. Rather, the companies could simply divide themselves vertically or horizontally in order to fall within the restrictions set by law. Under S. 2387, a shareholder in Exxon could either become a shareholder in four separate firms producing, transporting, refining, and selling oil, or a shareholder in a pipeline company and several small integrated companies, each falling within the size limits set by the law. It probably would not be that simple, but whether the impact of divestiture on shareholders would be as serious as some allege is anyone's guess.

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Divestiture would certainly create confusion in the oil industry and divert industry talents to reorganization at a time when they might better be applied to efforts to achieve U.S. energy self-sufficiency. It would also result in higher prices to consumers. This would occur in several ways.

First, managerial and other administrative services would necessarily be duplicated. There would have to be additional staff and facilities at all levels of the industry and, as a result, higher prices for consumers to cover these additional costs.

Second, the industry would have to increase its working stocks and storage facilities at the refinery level. An integrated oil company's refinery is usually designed to run a certain blend of crude oil from several sources; it typically does not have sufficient blending capacity at its refineries. Instead, the integrated company mixes the crude oil from its captive wells or other sources in a pipeline system which it partially owns. The integrated company can do without substantial storage and blending facilities at its refinery because it has control of its crude oil at all stages of production and transportation. As a rule, it can schedule deliveries to meet its own refinery's needs. However, if it did not have this ability--as it would not after divestiture--a refinery company, to err on the safe side, would have to have substantially greater working stocks of the various types of crude oil that it uses. It would also have to have additional blending tanks within its perimeters.

One way to get around this problem would be for the refinery to adjust its operations from time to time to accommodate different types of crude oil. In some instances, this would be impossible or impractical. For

example, a particular refinery may be unable to use high sulfur crude oil because it would corrode its equipment. At present, the refinery probably avoids this problem by blending its high and low sulfur crudes in its pipeline system. In other instances a refinery might be able to make relatively minor adjustments to accommodate different quality crude oils. These adjustments would, however, involve some down time which, in turn, would mean unutilized refinery capacity, lower production of refined products, and higher costs to consumers.

The same is true at the wellhead. One reason why the integrated companies often do not have sufficient storage facilities at their wells is that, in effect, their pipelines serve this function for them. As a result of divestiture, newly independent producers would probably have to increase their storage capability, and their working stocks, to protect against surges in demand and changes in pipeline availability.

In short, divestiture will not be cost-free to society. Although it may result in somewhat greater competition in the oil industry, it is also likely to discourage investment in the industry, require duplication of facilities, and result in higher prices to American consumers. Will the benefits of divestiture justify its costs? We are inclined to doubt it. In its deliberations, the Congress should make some effort to tally these costs before acting to break up the vertically integrated companies on the assumption that the public would be certain to benefit.

While it is deliberating divestiture, Congress might also want to consider other fundamental issues such as: Why is special antitrust legislation for the oil industry necessary? What kind of precedent is being set by enacting legislation aimed at only a few companies? Are existing antitrust laws inadequate as far as the industry is concerned?

The Sherman Act is the basic antitrust statute. It flatly prohibits any contract, combination or conspiracy in restraint of trade or commerce and makes it illegal for any person to monopolize any part of such commerce. In judging whether a contract or combination is illegal, courts will generally try to consider all factors and attempt to balance the benefits and costs of a particular decision. However, five types of business restraints are declared illegal _per se_. They are: (1) price fixing among competitors; (2) agreements to limit production; (3) agreements to divide markets; (4) resale price maintenance agreements; and (5) group boycotts or concerted refusals to deal with other companies.

Section 5 of the Federal Trade Commission Act makes unlawful "unfair methods of competition and unfair or deceptive acts or practices." The Commission has wide discretion in declaring trade practices to be unfair and ordinarily the courts will not question the Commission's judgment.[62] Section 5 also covers conduct which does not yet violate the Sherman Act but may be expected to do so if allowed to continue.[63] The FTC staff has brought its complaint against the eight largest oil companies under Section 5.

In contrast to the general provisions of the Sherman and Federal Trade Commission Acts, the Clayton Act is narrowly drawn. Section 2, as amended by the Robinson-Patman Act, prohibits price and service discrimination. This section provides protection to small companies like independent gasoline marketers who purchase their supplies wholesale from large companies

62. _Federal Trade Commission v. Brown Shoe Co._, 384 U.S. 316 (1966).
63. _Federal Trade Commission v. Cement Institute_, 333 U.S. 683 (1948).

and, at the same time, compete with the supplier at the retail level. Section 3 covers exclusive arrangements and tying clauses. Finally, Section 7 prevents a corporation from obtaining the assets of any other corporation "where in any line of commerce in any section of the country, the effect of such acquisition may be substantially to lessen competition, or tend to create a monopoly."[64]

The courts also have considerable latitude in formulating remedies for antitrust abuses. Upon a finding that monopoly power exists, the courts can: (1) forbid the continuation of illegal acts; (2) force the defendant to make restitution; and (3) restore competitive conditions.[65] Among the measures that the courts may order in an attempt to restore competitive conditions is vertical divestiture. Vertical divestiture can be ordered by the courts, despite any ensuing economic hardship, if this is the only effective means of redressing an antitrust violation.[66]

Why then, with this substantial body of statutory and case law and adequate remedies available at law and equity, is special divestiture legislation for the oil industry necessary at this time? Perhaps it is because, as some critics claim, the laws are never vigorously enforced. Yet the facts do not support this charge. Between 1963 and 1973 the Justice Department initiated 224 separate investigations into industry practices and brought 40 formal complaints.[67]

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64. For a more complete discussion of the antitrust laws in general, see S. Oppenheim and G. Weston, Federal Antitrust Laws: Cases and Comments, St. Paul, Minn., West Publishing Co., 1968. See, also, Jerold G. Van Cise, The Federal Antitrust Laws, 3d Ed., Washington, D.C., American Enterprise Institute, 1975.

65. Phillip Areeda, Antitrust Analysis, Second Edition, Boston, Little, Brown and Co., 1974, p. 55.

66. United States v. E. I. duPont deNemours & Co., 366 U.S. 316 (1961).

67. Statement of Deputy Assistant Attorney General Bruce Wilson, Hearings on Market Performance and Competition in the Petroleum Industry Before the Special Subcommittee on Integrated Oil Operations of the Senate Interior Committee, 93d Cong., 1st Sess., 1973, p. 417.

Another justification given for divestiture legislation is that, when the Department does bring a case, it inevitably loses because it is understaffed and poorly funded. Divestiture legislation, however, is an extreme remedy for this problem. Instead it would seem more appropriate to budget greater funds for federal antitrust activities. Legislation to do this has already been introduced in Congress and has received broad, bipartisan support.

This assumes, however, that money will buy justice. Unfortunately, to the average citizen this often seems the case. It is at least arguable, however, that the reason why the courts have found that vertical integration is not anticompetitive is that it is not. S. 2387 and other vertical divestiture bills would, in effect, make the vertical integration of the larger oil companies anticompetitive by definition.

A third justification given by proponents of divestiture is that it takes too long to secure divestiture through the judicial process. For example, the FTC staff estimates that it will require three more years of investigation, together with an analysis of several million documents and the depositions of 500 to 700 industry officials before their case is ready for trial.[68] Divestiture legislation would circumvent an enormous amount of work. However, it would clear away this red tape by declaring the industry guilty of antitrust violations by legislative fiat rather than the decision of the courts. One man's red tape is another's due process. Whether a divestiture law could withstand a court challenge on this point

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68. Federal Trade Commission, Certification to Commission of Recommendation of Administrative Law Judge that Commission Consider Withdrawal of Complaint In the Matter of Exxon, et al., Docket No. 8934 (Oct. 1975), p. 4.

is unknown. Ultimately, the Supreme Court would almost certainly decide this issue and the Supreme Court has already held that a corporation may not be deprived of its property without due process of law.[69]

S. 2387 may also be held unconstitutional as a bill of pains and penalties. A bill of pains and penalties imposes punishment on specific individuals or easily ascertainable members of a group. Under the Constitution, the legislature may not usurp this judicial function. Perhaps the best rationale for this prohibition is one that Supreme Court Justice Joseph Story gave over 140 years ago.

> In such cases [where bills of pains and penalties have been enacted], the legislature assumes judicial magistracy, pronouncing upon the guilt of the party without any of the common forms and guards of trial, and satisfying itself with proofs, when such proofs are within its reach, whether they are conformable to the rules of evidence, or not. In short, in all such cases, the legislature exercises the highest power of sovereignty, <u>and what may be properly deemed an irresponsible despotic discretion, being governed solely by what it deems political necessity or expediency, and too often under the influence of unreasonable fears, or unfounded suspicions.</u>[70]

On the other hand, there is precedent for divestiture legislation, most notably in the Public Utilities Holding Company Act of 1935. Whatever the outcome of the inevitable court challenge, one thing is certain: the litigation would probably drag on for years and, in the meantime, few investors are likely to show much interest in the oil industry. This would occur at precisely the time when it is in the national interest to increase investment in the industry in order to advance the goal of U.S. energy self-sufficiency.

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69. See, for example, <u>Smyth v. Ames</u>, 169 U.S. 466 (1898); <u>Leggett Co. v. Baldridge</u>, 278 U.S. 105 (1928).

70. Joseph Story, <u>Commentaries on the Constitution of the United States</u>, Vol. 3, Boston, 1833, Section 1338, (emphasis supplied).

5. HORIZONTAL INTEGRATION IN THE "ENERGY INDUSTRY"

Horizontal integration in the energy industry is also under attack. Since the mid-1950's many of the larger oil companies have diversified into alternative energy sources, such as coal and uranium. It is claimed by some critics of the industry that this diversification is anticompetitive. Horizontal integration, it is thought, reduces the number of competing companies in the "energy industry." For this reason, legislation must be passed to preserve competition by preventing this practice.

For example, some critics argue that the oil industry, by aggressive promotion of the use of oil and natural gas as a boiler fuel, has helped to undermine coal's last major market, the electric utilities. Because of the oil companies' actions, it is alleged, the coal industry has been depressed, in effect permitting the coal companies to be bought up at bargain prices.[71]

It is also argued that the participation of petroleum companies in the development of substitute fuels, such as coal and oil shale, involves an inherent conflict of interest. Oil companies controlling coal and oil shale ventures may not prove especially diligent in pushing new advances in technology if these advances undermine the future profitability of oil. Those oil companies with substantial interests in oil production will have an incentive not to develop low cost alternative sources of energy.

For example, a recent study for the Brookings Institution asserts that oil companies will be reluctant to develop oil shale for this reason.[72]

71. Based on a conversation with a Washington lawyer active in antitrust litigation involving the oil industry.

72. For example, see Paul Davidson, Laurence H. Falk, and Hoesung Lee, "Oil: Its Time Allocation and Project Independence," Brookings Papers on Economic Activity, Washington, D.C., The Brookings Institution, 1974, Vol. 2, p. 429.

However, this argument suffers from the same fallacy as the argument by Allvine and Patterson, discussed in the previous section. For an integrated oil company to benefit by limiting development of low cost synthetic fuels, it must have a substantial interest in production relative to such downstream activities as refining and marketing. In fact, all but one of the major integrated oil companies are net purchasers of crude oil.[73] As a group they must purchase crude oil from independent producers in order to keep their refineries operating at reasonably full capacity. Or, they must purchase crude oil from abroad, most likely from countries where they now have a limited equity position and earn little if any profit because of recent actions by the OPEC countries. It is because most integrated oil companies are net purchasers of crude oil that several of these companies actually urged the government to put a lid on domestic crude oil prices in 1973 when domestic prices began to rise in response to price increases by the OPEC countries.[74] In short, it is not at all clear that the integrated oil companies lack incentives to develop low cost alternatives to conventional crude oil, if they exist. This incentive actually results from their being integrated and, especially, their substantial investment in refining operations.

In October 1974 an amendment to the Emergency Natural Gas Act requiring horizontal divestiture was defeated in the Senate by a vote of 39 to 53. As with the amendment requiring vertical divestiture, several Senators voted in the opposition, not because they opposed horizontal divestiture, but because

73. See Table 11.

74. Personal experience by one of the authors. These companies included two of the eight largest majors, both of them relatively crude short.

the amendment was introduced without benefit of hearings or public comment. For this reason, S. 489, the Interfuel Competition Act of 1975, is now under consideration in committee. In general, this bill would prevent any company involved in the production or refining of petroleum or natural gas from owning any assets in other energy industries. S. 489 defines six basic energy activities other than oil and gas: coal, oil shale, uranium, nuclear reactors, geothermal energy, and solar energy. It would be unlawful for any company engaged in the production and refining of petroleum and/or natural gas to acquire any interest in these other energy activities. It would also be illegal to own or control any of these activities three years after the bill's enactment. In other words, oil and gas companies would have three years to divest themselves of existing horizontally integrated operations.

Unlike S. 2387, which calls for vertical divestiture, S. 489 does not apply only to the largest companies in the oil industry. Small independent producers and refiners could not be horizontally integrated under this bill. It should also be noted that S. 489, like S. 2387, gives preferential treatment to marketers of oil and natural gas. This segment of the petroleum industry could, in theory at least, remain horizontally integrated. In addition, S. 489 would apparently allow any petroleum or natural gas transporter to integrate horizontally into non-oil and gas activities. No reason has been given for these anomalies.

To assess the benefits and costs of horizontal divestiture, it is first necessary to understand what is meant by "horizontal integration." As it has been used in the study of industrial organization, "horizontal integration" has meant expansion within a particular stage of production in a

particular industry. For example, the acquisition by a refiner of new refineries would constitute horizontal integration in the traditional sense of the word. In the current debate, the term "horizontal integration" is now being used more broadly to describe the diversification of petroleum companies outside the petroleum industry but within the "energy industry."

Implicit in this broader definition of horizontal integration are several doubtful assumptions. First, it is assumed that alternative energy sources are equally and readily available to the consumer. It is also assumed that the consumer is able to switch easily from one energy source to another. If so, the petroleum, coal, nuclear, and other energy producing industries would actually be parts of a single "energy industry." The fact that all alternative energy sources are readily available and substitutable means that they are all competing elements of a larger industry. Given this concept of the energy industry, it makes no difference whether a company expands operations within a particular energy subindustry or across energy subindustries. In either case, the level of competition in the energy industry as a whole is reduced because any company expansion or acquisition increases energy industry concentration.[75]

The issue of horizontal integration and divestiture is not as simple as this reasoning might imply. In most cases, alternative energy forms are not substitutable. For instance, one cannot burn coal in an automobile. Nor can one use uranium in an airplane, at least with today's technology. To the extent that alternative energy sources do not compete with one

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75. This argument is developed by the FTC staff in Federal Trade Commission, Concentration Levels and Trends in the Energy Sector of the U.S. Economy, Staff Report to the Federal Trade Commission, Washington, D.C., Government Printing Office, March 1974.

another in the same markets, the concept of an "energy industry" is inappropriate and misleading.

To say that alternative energy sources are not readily available and substitutable in all markets does not, of course, completely dismiss the argument against horizontal integration. Under certain circumstances and in certain markets the expansion of one company, whether by development of a new company or acquisition of an existing company, could increase concentration and reduce competition. For example, an electric power plant capable of using either natural gas, coal, or fuel oil might be put at a considerable competitive disadvantage if formerly independent suppliers of these fuels were to merge. If there were no other competing sellers of these fuels, the electric power plant would face a monopoly and would not be able to use as a bargaining lever the fact that it might turn to alternative sources of supply. And, even if there were additional suppliers for one or more alternative fuel inputs, collusion by the now smaller number of competitors would be easier. Thus, while the cost of horizontal integration in terms of potential competition foregone may not be as great as some believe, this cost cannot be dismissed either.

The obvious question at this point is: How significant has the trend been toward concentration in the "energy industry" as opposed to concentration in its components--the petroleum, gas, coal, and nuclear power industries? The FTC staff has concluded in its study of interfuel concentration that horizontal concentration is not very significant at present.

> In the national energy market made up of all four fuels combined (oil, gas, coal, and nuclear) concentration . . . is lower than the average concentration in the four separate fuels . . . The reason that energy concentration is

> lower than concentration in the separate fuels is that, although the large petroleum companies are both large crude oil producers and large natural gas producers, at the current time most of the large coal and uranium companies are not owned by petroleum companies. Concentration is also low compared tc many other industries.[76]

The FTC staff goes on to say that reserves of the four fuels have recently become more concentrated than production. For this reason, downstream operations in the separate fuel industries and in the energy industry as a whole may become more concentrated in the future. Thus, the Federal Trade Commission staff report recommends that both interfuel and intrafuel mergers should be given close scrutiny. The report does not recommend, however, horizontal divestiture or other more extreme remedies.[77]

Supporters of horizontal divestiture have failed to realize that there are important benefits derived from horizontal integration. Perhaps most important, economies can be realized by bringing overlapping technology and operations under one management system. For example, the exploration for petroleum, coal, and uranium have much in common. Oil and gas are often by-products of drilling, while research and development in coal gasification and liquefaction may be advanced by on-going research and development in the oil and gas industry. Successful commercial development of oil shale would seem to suggest a need for techniques and abilities that span both the petroleum and coal industries.[78]

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76. Ibid., pp. 147-148, (parentheses supplied).

77. This view is shared by more than just the authors of that study. See Statement of Owen Johnson, FTC staff member, before the Senate Antitrust and Monopoly Subcommittee, October 21, 1975 (mimeo); and Statement of F. M. Scherer, FTC staff member, before the Joint Economic Committee, November 19, 1975 (mimeo).

78. See Statement of C. Howard Hardesty before the Subcommittee on Energy of the Joint Economic Committee, November 19, 1975 (mimeo), pp. 3-8.

In view of these economies, it is not surprising that Edwin Mansfield would find a sample of executives in the coal, petroleum, and electrical equipment industries feeling without exception that the acquisition of coal firms by petroleum companies would stimulate development of coal gasification, liquefaction, and other innovations in energy production. Oil companies would, they thought, devote expertise and capital that would not otherwise be available for development of synthetic fuels.[79] This belief is borne out by the fact that, between January 1964 and June 1974, 49 of 52 patents received by coal companies for coal conversion were received by a small number of coal companies owned by oil companies.[80]

Another advantage of horizontal integration is flexibility. Diversified companies are better able to mobilize the capital needed for expansion of needed energy activities. Horizontal diversification allows a company in a declining industry to expand in a growing industry. Simply put, it enables the optimal use of scarce resources. Claude Brinegar, now Senior Vice President of Union Oil Company, has put the issue succinctly: "If you legislatively build a fence around our future activities, you are sentencing us to a slow death."[81]

It is now the stated policy of the government to develop the United States' extensive coal reserves as fast as possible, within constraints

79. Edwin Mansfield, "Firm Size and Technological Change in the Petroleum and Bituminous Coal Industries," in Thomas D. Duchesneau, Competition in the Energy Industry, p. 342.

80. Michael Canes, Oil Firm Acquisition of Coal and Uranium Assets, unpublished paper, American Petroleum Institute, January, 1975.

81. Statement by the former Transportation Secretary before the Senate Judiciary Subcommittee on Antitrust and Monopoly, October 21 and 22, 1975, (mimeo).

imposed by the need to protect the environment. It is also national policy to reduce U.S. dependence on imported oil. Presumably, there should be no objection to the oil companies' investing their resources in coal. This is what the government wants; it is also what the current relative profitability of the coal and oil industries would encourage. Nothing would seem more counterproductive than to insist that the oil and gas companies invest only in the oil and gas industries.

When the potential but as yet undemonstrated dangers of horizontal integration are weighed against its proven advantages, there would seem to be little reason for concern. Movement toward higher levels of horizontal integration may merit close and continuing observation. However, at this point, it does not seem to justify legislation to restructure the energy industry by forcing horizontal divestiture.

6. JOINT VENTURES

Few practices in the oil industry have given rise to so much criticism, and so little research, as the widespread formation of joint ventures. Critics claim that concentration ratios and other measures of market power are of little use in measuring competition in the industry because of numerous joint venture arrangements. These arrangements effectively reduce the number of independent and self-motivated firms, they argue, because they provide a place where companies meet, exchange information and map out common strategies.[82] On the other hand, industry spokesmen and others argue that

82. See, for example, John W. Wilson, "Market Structure and Interfirm Integration in the Petroleum Industry," Journal of Economic Issues, Vol. IX, June 1975, pp. 319-335.

joint ventures spread risk, promote efficiency and increase competition. One result of joint ventures, they contend, is lower prices to consumers.

Disagreement over the merits of joint ventures is hardly surprising. Ever since Cato the Elder first expressed qualms about this practice in 160 B.C.,[83] the competitive (or anticompetitive) significance of the joint venture has been the subject of considerable confusion. We do not pretend to resolve the issue here. Instead, we simply review the various arguments advanced for and against joint ventures in the oil industry. We also point out where the data and analysis necessary to assess the validity of these arguments is lacking.

A joint venture is usually defined as "the creation of a new business entity by two or more corporate parties."[84] However, in the oil industry creation of new entities is the exception not the rule. Joint ventures are generally contractual arrangements between separate corporations. The prevailing practice is for the parties to enter into an agreement that expressly states that no partnership, association or trust is being created. Each party is then free to pursue any course of action desired, subject only to the terms of the agreement.[85]

Probably the best formulation of the issues that one should consider in assessing the impact of joint ventures is provided by Walter Mead. Mead lists four basic justifications for joint venture operations:[86]

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83. Cited in Fritz Machlup, The Political Economy of Monopoly, Baltimore, Johns Hopkins University Press, 1952, pp. 185-186.

84. Michael Bergman, "The Corporate Joint Venture Under the Antitrust Laws," 37 New York Law Review 712 (1962).

85. Charles C. Gremillion, "Offshore Leases in the Gulf of Mexico--Joint Venture Agreements and Related Matters," 25th Oil & Gas Inst., Matthew Bender, 1974, p. 205. Pipelines are a notable exception. They are discussed separately below.

86. Walter J. Mead, "The Competitive Significance of Joint Ventures," 12 Antitrust Bulletin 819, 1967, pp. 823-4.

1. They permit entry into an industry or activity where absolute capital requirements are so high that only a few large firms could otherwise participate.

2. Risks may be so great that only a few, if any, existing firms would be willing to participate on their own.

3. Separate operations by competing firms may be economically inefficient.

4. In certain cases, large investments may produce external economies that will accrue to all firms regardless of their participation in the initial undertaking.

Mead also lists three possible drawbacks to joint ventures:[87]

1. Competition among horizontally related firms may be restrained because the parents may develop a community of interests that discourages arm's length transactions.

2. Where the parents have a vertical relationship, market foreclosure may result because of preferred treatment toward the joint venture.

3. The parents may refrain from competing in the same market as the joint venture, thus reducing the total number of competitors in an industry.

In the oil industry a significant number of joint ventures occurs in offshore lease acquisition, exploratory and developmental drilling, ownership and production from oil and gas leases, pipeline ownership and operation, and international activities.[88] Because this paper focuses on the domestic

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87. Ibid., pp. 822-3.
88. Duchesneau, p. 48; John W. Wilson, et al., "A Preliminary Report on the Market Structure and Competitive Features of the U.S. Petroleum Industry," unpublished paper submitted to the National Science Foundation, 1975, p. 17.

oil industry, we ignore international joint ventures.[89] We also defer the discussion of pipeline joint ventures to the next section.

There is no question that the joint venture is widely used in exploration and production of crude oil. Wilson has found that only four of the sixteen largest companies with interests in federal offshore leases produce more than 50 percent of their leases independently.[90] For the period 1954 through 1967 Mead has determined that, of the 20 largest oil companies, 14 had joint venture arrangements with the other 19.[91] It is from findings like these that critics have concluded that joint ventures are anticompetitive.

However, the mere existence of joint ventures, by itself, is not persuasive evidence of anticompetitive behavior. Proponents of the view that joint ventures are anticompetitive must go beyond merely presenting

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89. There is substantial evidence that, in the past, international joint ventures were highly anticompetitive. See Morris Adelman, The World Petroleum Market, Baltimore, Johns Hopkins Press, 1972, pp. 86-88. See, also, Senate Committee on Foreign Relations, Multinational Oil Corporations and U.S. Foreign Policy, pp. 33-74; and Mira Wilkins, "The Oil Companies in Perspective," Daedalus, Fall 1975, pp. 159-178. Such consortia as Aramco and the Anglo-Iranian Oil Company at one time effectively policed production and stabilized prices of foreign crude. Two things should be noted, however. First, these consortia were monopsonists with regard to producing countries. They had an incentive to keep the prices paid to producing countries as low as possible. For this reason, their interests were not necessarily opposed to those of U.S. consumers. Second, whatever monopsony power these foreign joint ventures enjoyed has now been almost completely eroded. The OPEC cartel is firmly in control of much of the foreign oil market and has assumed the functions formerly performed by the international oil companies. Of course, OPEC's objectives differ from those of the companies.

90. Testimony of John Wilson, Hearings on the Natural Gas Industry Before the Subcommittee on Antitrust and Monopoly of the Senate Judiciary Committee, 93d Cong., 1st Sess., pt. 1, 1972, p. 482.

91. Walter J. Mead, "The Structure of the Buyer Market for Oil Shale Resources," Natural Resources Journal, Vol. 8, October 1968, p. 618.

data on the existence of joint ventures; they must provide convincing evidence that the joint ventures have, in fact, been collusive in intent or effect. As Duchesneau states, "It is . . . a leap of faith to conclude that the prevalence of joint ventures in oil and natural gas results in monopolization."[92]

Of the various types of joint venture arrangements in the domestic production segment of the oil industry, only one has received substantial attention from policy analysts: joint bidding for oil and gas leases in Alaska and offshore areas. Analyses of joint bidding generally find little evidence of anticompetitive behavior.

Mead has found a tendency for companies bidding jointly on certain tracts at a sale not to bid against each other on the remaining tracts.[93] There is also a tendency for bidding partners at one sale to refrain from bidding against one another in other sales in the same area. However, this tendency disappears after about two years. Finally, Mead has found no tendency for those bidding together in one geographic area to avoid bidding against each other in other areas.

Markham argues that joint bidding has actually increased competition among potential producers by adding to rather than subtracting from the total number of bidders on an individual tract.[94] Consistent with this finding, Markham also notes a tendency for joint bidding to be used more

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92. Duchesneau, p. 61.

93. Walter Mead, "The Competitive Significance of Joint Ventures," pp. 838-46.

94. Jesse W. Markham, "The Competitive Effects of Joint Bidding by Oil Companies for Offshore Leases," Markham and Papanek (eds.), Industrial Organization and Economic Development, New York, Houghton Mifflin, 1970, pp. 122-133.

often by small and medium-sized firms rather than large firms.[95] Finally, Markham has developed a model to predict the expected sale price of a tract. He reasons that bids below the expected price would indicate collusion among bidders. Instead, Markham finds that companies have paid more than the expected price, a conclusion that leads him to reject the hypothesis of collusion in offshore lease sales.

More recently, Mead has assembled data on the number of bidders per tract and the rate of return on OCS leases.[96] He begins with the hypothesis that fewer bidders per lease and an abnormally high rate of return might indicate the presence of anticompetitive behavior. He finds that the average number of bidders per tract has increased over time and that the average after tax rate of return on OCS tracts was only 6 percent during the period covered by his study. Mead thus concludes that, "joint biddings for outer continental shelf oil and gas leases pose no net threat to competition."

Yet, despite these findings, there has been considerable concern over possible collusion among major oil companies bidding for OCS leases. As a result, the Interior Department has published regulations barring joint bidding among at least four major oil companies.[97] The Department has accepted the view that joint bidding among large firms reduces the number of bidders and, for this reason, the government's sale price. This is thought to occur in two ways. First, since large firms are financially capable of

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95. A similar conclusion is reached by Susan M. Wilcox, "Entry and Joint Venture Bidding in the Offshore Petroleum Industry," Ph.D. dissertation, University of California, Santa Barbara, 1974, p. 75.

96. Statement of Walter J. Mead, Hearings on Market Performance and Competition in the Petroleum Industry, pt. 3, pp. 1005-1014.

97. Oil and Gas Journal, October 6, 1975, p. 54.

submitting solo bids, joint bidding simply subtracts from the total number of bids that would otherwise be offered. Second, large firms, by discussing possible joint bid agreements with other companies prior to the sale, learn of the other companies' strategy and are able to adjust their own bids accordingly.[98]

The practical effect of the ban will probably be marginal. Under the new regulations, large firms may bid jointly with small firms and are only prohibited from bidding jointly with each other. "Large" is defined as production in excess of 1.6 million barrels per day of crude oil or its equivalent. At present, only four firms--Exxon, Gulf, Mobil and Texaco--fit this definition.[99]

Because of the attention that has been given to joint bidding in lease sales, one might assume that this type of joint venture is most anticompetitive. In fact, many critics of joint ventures believe that joint bidding is actually the least anticompetitive. For one thing, a joint bidding venture is short-lived. There is not the time to develop the community of interest believed to be so detrimental to a competitive environment. Also, the large amounts of money "left on the table" at lease sales suggest a lack of collusion or information exchanges by companies.

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98. Department of the Interior, Bureau of Land Management, Office of OCS Program Coordination, "An Analysis of the Proposed Ban on Joint Bidding," unpublished, June 1975. For an account of what is actually discussed prior to the entry of a joint bid, see Gremillion, pp. 209-212. Some of the issues considered would probably aid a bidder in developing an optimal strategy.

99. Oil and Gas Journal, October 6, 1975, p. 54. However, other majors may be included depending on production by their unconsolidated subsidiaries.

However, in the other areas where the joint venture is commonly used--exploratory and developmental drilling and production--there has been little empirical work. For this reason, little or no evidence exists to prove or disprove the presence of anticompetitive behavior.[100] For instance, there has been no attempt to evaluate the costs and benefits of joint venture production on the North Slope of Alaska other than assertions that it is more efficient to have a single company do the work. The same is true for joint production ventures on the Outer Continental Shelf.

We suspect that real advantages accrue from joint ventures in drilling and production. There are probably substantial economies of scale in these activities, particularly in remote areas such as the Alaskan North Slope. We also suspect that the possibilities of collusive behavior in these types of joint ventures have been greatly exaggerated. However, what is needed is more analysis like that done on OCS bidding, together with better specification of the hypotheses to be tested. For example, how does a community of interest with respect to joint production arrangements manifest itself? What kind of data are needed to determine whether drilling joint ventures permit economies of scale? In short, until the argument that joint ventures are anticompetitive is more sharply drawn and analysis of this argument completed, the jury must remain out on the question of whether or not joint ventures in production are anticompetitive.

7. THE OIL PIPELINES

There are over 250 pipeline companies in the United States moving crude oil, light hydrocarbons and refined products. Of these companies,

100. For a description of joint production agreements and the factors involved in drafting them, see Gremillion, pp. 213-218.

about a hundred are regulated by the Interstate Commerce Commission; the remainder are, for the most part, under the jurisdiction of state regulatory bodies. About 50 of the hundred pipelines subject to ICC regulations are joint ventures owned by consortia of oil companies, railroads and various firms not otherwise engaged in the oil industry. Others are subsidiaries of individual vertically integrated oil companies. On the whole, there is no predominant pattern of ownership in the pipeline industry.

Opponents of oil company ownership of pipelines generally voice two basic objections. First, because many pipelines are part of a vertically integrated operation, ownership of a pipeline by a refiner/producer or a refiner/marketer permits various forms of anticompetitive behavior already discussed in Section 4. Second, pipeline joint ventures involve close collaboration of companies which would otherwise compete at arm's length. It is alleged that this tends to limit competition in the same way as joint ventures in exploration and production of crude oil. Other objections to oil company involvement in pipelines have been raised by the Federal Trade Commission staff. In particular, the FTC staff has claimed that, because virtually all crude oil passes through pipelines owned in whole or in part by oil companies, the companies are able to control the distribution of crude oil and the output of independent refiners. The integrated oil companies are also able to exert considerable leverage on independent producers and marketers. As a result the independents' competitive position has been eroded. The FTC staff has also alleged that oil companies owning pipelines have manipulated tariff rates to their own advantage and to the disadvantage of competing modes of transportation. Finally, it is charged that the oil

companies enjoy an unfair advantage through their ownership of pipelines because, in effect, they receive a rebate of pipeline tariff rates in the form of dividends.[101]

Criticism of the oil companies' ownership of pipelines is not a new phenomenon. Throughout the Twentieth Century there has been a recurring controversy over divorcement of pipelines from other segments of the oil industry.[102] Nearly thirty years ago, Eugene V. Rostow declared, "The chief weapon of the major companies for protecting their position is their ownership of pipelines."[103] In 1967, the U.S. Attorney General reported:

> The entire crude oil pipeline system is so dominated by the integrated companies that virtually all shipments, even if handled at origin or near destination by one of the few independent lines, must have intermediate access to an integrated company line. And outsiders simply are unable to use these lines as they could other types of common carriers.[104]

Objections to major oil company ownership of pipelines are essentially the same today as they were in the past. How valid are these objections?

For the Nation as a whole, the pipelines are a relatively unconcentrated industry. The top four interstate pipelines control only 23 percent of the market; the top eight, only 42 percent.[105] However, these data are misleading. In any one region crude oil and product pipelines are usually local

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101. FTC Staff, Complaint Counsel's Prediscovery Statement, pp. 67-68 and 82.

102. For a discussion of this controversy, see Arthur M. Johnson, Petroleum Pipelines and Public Policy: 1906-1959, Cambridge, Harvard University Press, 1967.

103. Eugene V. Rostow, A National Policy for the Oil Industry, New Haven, Yale University Press, 1948, p. 57.

104. Cited in Senate Antitrust Subcommittee Staff Report, 121 Cong. Rec., S16403 (daily ed., September 22, 1975).

105. Statement of W. T. Slick, Vice President of Exxon, Hearings on the Industrial Reorganization Act, pt. 9, p. 451.

monopolies. Only one pipeline generally serves a field or a group of refineries. The reason: economies of scale. It is often inefficient for two competing pipelines to operate side by side. This fact has been recognized for years and the pipelines treated as common carriers by the federal government since the beginning of this century. The issue is not whether the pipelines should be regulated as public utilities, but whether existing regulations are adequate.

In 1906 Congress passed the Hepburn Act which declared pipelines in interstate trade to be common carriers and required these lines to transport oil brought to them from any source at fair and reasonable terms. The pipelines were also placed under the jurisdiction of the Interstate Commerce Commission and were prohibited from providing discriminatory service to different users of the same line.

After passage of the Hepburn Act, some pipeline companies claimed they were not common carriers at all because they served only their own facilities. In 1912, the ICC held that the Congress had intended to regulate these pipelines as well. In the ensuing Pipelines Cases, the Supreme Court upheld the Commission. Subsequently, the courts established that a pipeline owned by one oil company transporting only that company's oil can be treated as a common carrier for reporting purposes, but is not required to carry oil for other companies or to have its "rates" approved by the ICC. However, joint venture pipelines were declared common carriers and were required to transport oil for non-owners under nondiscriminatory terms.

The pipelines are also covered by the Elkins Act of 1903 which disallows rebates and other forms of discrimination by common carriers. On the basis of this Act, in 1941 the Justice Department brought suit against

41 pipeline companies alleging that dividends paid to these companies were, in effect, an illegal rebate that discriminated against non-owner users of the pipelines. This litigation resulted in a consent decree allowing shipper-owners of common carrier pipelines to receive dividends of no more than 7 percent of the valuation of the pipelines' property, this valuation to be determined by the ICC. Earnings above this rate must be put in a special fund earmarked, primarily, for new construction and retirement of debt.

There have been other complaints about the integrated oil companies' pipelines since passage of the Hepburn Act. As a rule, these complaints have been resolved satisfactorily by the ICC or the courts.

For example, it was found that the maintenance of high minimum tender requirements (or minimum shipment levels) prevented small oil producers and refiners from shipping oil in trunklines owned by the large, integrated companies. In 1922, the ICC lowered minimum tender requirements from 100,000 to 10,000 barrels and subsequently reaffirmed this level and its right to establish minimum tenders in various cases brought before it. Today, not only does the ICC determine the minimum tender, it can require prorationing of a pipeline's capacity among all users in the event that this capacity is fully utilized.

The pipeline companies were also accused of maintaining excessively high rates in order to depress the price of oil paid to independent producers and to squeeze the profits of independent refiners. In the 1930's the ICC investigated pipeline rates and found that the rates of some companies had, indeed, been excessive. Since then, the Commission has established even

more firmly its power to regulate rates charged by the interstate common carrier pipelines.[106]

Most intrastate pipelines are regulated by the states as common carriers. In fact, many states had declared pipelines to be common carriers prior to passage of the Hepburn Act in 1906, and at least twenty states regulated interstate pipelines as common carriers as early as 1890. In short, the pipelines are already extensively regulated by the federal and state governments. The relevant question is: Is this regulation enough?

In attempting to answer this question, the Chairman of the ICC recently told Congress that, "Today there are so few complaints and so few problems that I must say [the pipelines are] one of the best run transportation systems we have."[107] He went on to state:

> In conclusion, it would appear that except for certain impediments brought about because of environmental considerations, pipelines have been constructed on an as-needed basis and generally provide good service. It has been our experience that pipeline rates are just and reasonable . . . . We have received no complaints in recent years involving allegations relative to the size of tender, the failure to publish through routes and joint rates, or to provide service to independents. The Commission now possesses the authority to investigate and correct abuses if they arise. However, to the extent that the need for further controls can be documented, the Commission stands ready to enforce them.[108]

Although the pipeline companies can probably find subtle ways of discriminating against non-owner users, the ICC is a forum to which these users can

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106. The foregoing discussion draws heavily on Arthur Johnson, Petroleum Pipelines, and Testimony of the Honorable George Stafford, Chairman of the ICC, Hearings on Market Performance, pt. 3, pp. 875-913. See, also, Statement of Jack Vickery, Hearings on the Consumer Energy Act of 1974, pt. 2, pp. 620-623.

107. Testimony of the Honorable George Stafford, p. 896, (parentheses added).

108. Ibid., p. 901.

take their complaints. This is, perhaps, its most important role in maintaining competition in the pipeline industry.

Sometimes even the threat of suit is enough to prevent discriminatory actions on the part of major oil company owners of pipelines. For example, a recent Senate Antitrust Committee staff report critical of oil company ownership of pipelines quotes testimony by the president of APCO, a small refiner.[109] APCO had bid away crude oil produced by an independent in Texas from SUNOCO, the producer's previous customer. According to APCO's president, Sun Pipeline advised his company that it could not move its newly acquired crude oil on the pipeline because it did not meet vapor specifications, even though the line had previously moved the same crude oil when it had belonged to SUNOCO. APCO threatened to sue. A few hours later, Sun Pipeline agreed to transport APCO's crude. Although the staff report presents this case as an example of a pipeline company abuse, it is really an example of how well the system works. As it turned out, APCO was protected by the law.

The ICC has received relatively few complaints about exclusionary practices by pipeline companies.[110] Since 1969, the Commission has considered only 18 cases protesting pipeline tariffs.[111] To some, the reason there are so few complaints is that independent companies fear retaliation by the majors. Yet, many of these same independents have been highly vocal in opposition to the major oil companies on other issues, such as

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109. Cited in Senate Antitrust Subcommittee Staff Report, p. S16405.
110. Letter from Hon. George M. Stafford to Hon. Joe L. Evins, reprinted in <u>Hearings on Consumer Energy Act of 1974</u>, pt. 2, pp. 641-643.
111. <u>Hearings on the Industrial Reorganization Act</u>, pt. 9, pp. 653-4.

petroleum allocation and entitlements. Where their basic interests are at stake the independents have been anything but reticent.

There is no evidence of discriminatory behavior by the pipelines toward independent producers. In fact, about 4,000 independent oil and natural gas producers have, through their trade association, The Independent Petroleum Association of America, stated on several occasions that they have not been denied access to major oil company owned pipelines. In a letter sent to each United States Senator on July 12, 1973, Tom B. Medders, Jr., then President of the IPAA, said, "This is to advise you that we are not aware of any producer having difficulty selling or moving his crude oil, and we do not believe any such discrimination exists."[112] Another letter dated November 6, 1973, from Dan Jones, General Counsel to the IPAA, to Senator Stevenson said:

> This is to advise you that we are not aware of any producer who is having difficulty selling or moving his crude oil and we do not believe discrimination exists in this respect. The conclusion that independent producers may have difficulty securing shipment of their oil, and are subject to discrimination by pipeline companies, is not supported by the experience of independent producers.[113]

A recent tabulation by the Association of Oil Pipe Lines, based on information provided by 51 pipeline companies accounting for most of the petroleum products shipped by pipeline in the United States, found that most shippers were non-owners. Of a total of 909 shippers on these lines, only 103 owned

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112. Reproduced in Hearings on the Consumer Energy Act of 1974, pt. 2, p. 711.
113. Ibid., pp. 597-598.

all or part of them. Moreover, of the 806 non-owner shippers, only 233 were major oil companies. The rest were independents.[114]

Critics allege that the pipelines, especially those that are jointly owned, have earned excessive profits. In fact, a thorough study of pipeline company profits in 1971 by Stewart Myers, an Associate Professor of Finance at MIT, has found no evidence that the pipeline companies' rate of return on investment was out of line.[115] In fact, the study determined that the average rate of return for the pipeline industry was about the same as that for AT&T, even though the pipelines are probably exposed to greater risk.

Critics have been especially concerned with the anticompetitive implications of joint venture pipelines. The staff of the Senate Antitrust and Monopoly Subcommittee states:

> Regardless of the legality of any specific [trunk] line the total effect must contribute substantially to restraining competition. The construction and operation of such lines inevitably involves a sharing of information about the partner's intentions and capabilities in crude production.[116]

Congress has also been concerned with how joint venture partners are selected, what is discussed at the preliminary meetings, and what type of information is exchanged between participants.[117]

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114. Letter from Association of Oil Pipe Lines to Hon. Warren Magnuson, Hearings on Consumer Energy Act of 1974, pt. 2, pp. 665-6.

115. Testimony by Stewart C. Myers, Market Performance and Competition in the Petroleum Industry, pt. 5, p. 1648.

116. Senate Antitrust Subcommittee Staff Report, 121 Cong. Rec., S16405.

117. For example, see, Hearings on the Industrial Reorganization Act, pt. 9, pp. 625-627.

Information pertaining to the operation of joint venture pipelines is protected by ICC regulations. The pipeline companies are prohibited from disclosing the throughput of any pipeline user to anyone, even an owner of the pipeline, and, in actual practice, the operating and planning divisions of major oil company pipeline owners are restricted in their contact with pipeline personnel. All requests for information typically go to a single corporate officer who is usually the corporation's representative on the pipeline company's board.

Obviously, in the planning of a new pipeline venture, or in the expansion of an existing line, some information about future plans passes among corporations. But how much information passes? How valuable is it to competitors? And, lastly, how does this information impede competition? These questions remain unanswered.

In short, it is difficult to make a case for further regulation of the pipeline industry. Existing regulations appear adequate to protect against anticompetitive abuse. Nor has a case been made for the divestiture of the integrated oil companies' holdings in pipelines or the break-up of joint ventures in the pipeline industry. The likely outcome of actions against the pipelines is continued disruption and confusion in the oil industry, precisely what the Nation does not need nor should it want at this time.

According to critics of the industry, the ICC is ineffective in enforcing existing regulations and, as a result, the pipelines have been guilty of monopolistic abuses. The proposed remedy: More regulations and even divestiture. What seems odd, however, is that those who are supposedly suffering at the hands of the pipelines do not seem to be objecting to

their treatment. It is difficult to find someone who has been abused. Perhaps these critics might share Othello's complaint: "I swear 'tis better to be much abus'd than but to know't a little."

8. EXCHANGE AND PROCESSING AGREEMENTS

Two other practices by the oil industry similar to joint ventures have been singled out by critics as potentially anticompetitive. These are exchange and processing agreements.

Exchange agreements are a highly efficient form of transportation. Rather than ship crude oil and refined products long distances, both integrated and independent oil companies have found it mutually beneficial to swap oil among themselves. A skilled crude and product trader is one of the most valued employees of an oil company. Using only a telephone, he is often able to "move" crude from Texas to California or product from Seattle to Bangor in a few hours. And, if he is exceptionally skilled, he is able to do this at minimal cost to his company. Exchange agreements are widely used for both crude oil and refined products. Because of these agreements, a significant share of the crude oil refined by an integrated company may actually come from other producers or owners, while a significant share of the product sold by the company may come from other refiners.

Processing agreements are less common. Under these agreements, oil companies pay others to refine their oil. Most processing agreements involve newly built refining capacity. Oil capacity is often expanded in discrete jumps because of economies of large scale operations. To make full use of capacity until marketing operations also expand, refiners will

agree to process crude oil owned by others for a specified period of time. While exchange agreements are a means of transporting oil as little as possible, processing agreements are a means of utilizing refinery capacity as efficiently as possible. For this reason, both types of agreements benefit consumers.

Yet both types of agreements have been under attack as inherently anti-competitive. For example, the staff of the Federal Trade Commission has alleged that exchange agreements effectively deny independent refiners access to crude oil and exclude potential new entrants from refining and marketing. The staff also argues that these agreements facilitate price fixing throughout a market area, increase effective concentration in both marketing and refining, and permit the integrated companies to avoid open market sales. Exchange agreements, the staff claims, raise costs to consumers because they are barter arrangements involving misallocation of society's scarce resources.[118] Others have charged that exchange agreements are used to avoid public regulation of pipelines, to deny the true value of crude oil to producers, to cheat royalty owners, and to avoid paying state and local taxes.[119]

Similarly, processing agreements are accused of having given the majors de facto control over portions of the independent refiners' capacity and, in this way, effectively increasing concentration in refining. Also, it is alleged that refiners blessed with processing agreements generally avoid

118. FTC Staff, Complaint Counsel's Prediscovery Statement, pp. 53, 56, and 88. See, also, FTC Staff, Preliminary Report, p. 30.

119. For example, see California Legislature, Joint Committee on Public Domain, "Crude Oil Exchanges: The Other Currency," September 1974, esp. pp. 11 and 26-29.

selling products to particularly aggressive independent marketers. Thus, processing agreements diminish competition at both the refining and marketing levels of the industry.[120]

Exchange agreements would be anticompetitive if companies, by engaging in them, were able to exclude from the marketplace other companies unable to obtain supplies of crude oil and product from other sources. This might occur either by design or default. In theory, exchange agreements might also help to stabilize market sharing arrangements among major oil companies.[121] Two questions should be posed, however. First, have these abuses occurred in fact as well as in theory? Even if they have, do the gains in efficiency resulting from exchange and processing agreements more than offset the loss of competition in the marketplace? Perhaps the best solution from the standpoint of society may not be to outlaw exchange and processing agreements, but to assure that all segments of the industry, independent as well as major oil companies, are able to participate in them.

Are exchange and processing agreements in fact anticompetitive? The Staff of the Senate Antitrust and Monopoly Subcommittee answers yes.

> Some of this activity is clearly cooperative and probably quite anticompetitive in nature. Processing agreements are an example of this . . . . The most important cooperative device in refinery operation is the exchange agreement. The net effect . . . is the elimination of any kind of free market either for raw materials going into the refineries or for product coming out.[122]

The subcommittee staff goes on the claim that the argument made by the companies that exchange agreements eliminate unnecessary movement of oil

120. FTC Staff, Complaint Counsel's Prediscovery Statement, p. 36.
121. Statement of Stephen Breyer, Harvard Law School, Market Performance and Competition in the Petroleum Industry, pt. 1, p. 446.
122. 121 Cong. Rec., S16405 (daily ed., September 22, 1975).

is a "strawman." The alternative to exchange agreements, it contends, is buying and selling in open markets. The staff also argues that the barrel-for-barrel terms of exchange agreements eliminate price competition, in effect, by eliminating price.[123] Finally, the staff asserts that these agreements put the small refiners in a dependent position relative to the major oil companies.[124] The allegation that product exchanges occur on a barrel-for-barrel basis and, for this reason, eliminate competition also appears in the FTC staff's prediscovery statement.[125]

First, the critics are wrong when they assert that no price is involved in exchanges and that oil is swapped on a barrel-for-barrel basis. In fact, oil traded on a barrel-for-barrel basis is the exception, not the rule. There are quality and transportation differentials for crude oil which are reflected in the prices at which it is traded. There are also quality and transportation differentials for refined products and, in some instances, different types of refined products are swapped between companies. It is not uncommon, for example, for a company to trade gasoline for home heating oil when its refinery yields do not correspond to its market needs. Under these circumstances, bartering of oil is not only infrequent, it is virtually impossible. Exchange agreements are almost always written in terms of prices. These prices may be posted prices for crude oil or market prices for products. Invariably, these prices are negotiated by the trading partners.

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123. Ibid., S16405.
124. Ibid., S16406.
125. FTC Staff, Complaint Counsel's Prediscovery Statement, p. 88.

Posted prices tend to be used in continuing exchange relationships. Some critics have charged, however, that posted prices are themselves a result of anticompetitive behavior in the industry.[126] Purchasers rather than producers of crude oil have historically set posted prices. This is correct. However, in the absence of federal allocation regulations, producers are free to sell to other refiners. (Witness the Sun Pipeline case discussed in Section 7.) It was the producers' ability to switch from one refiner to another that led to the sharp increase in posted prices for unregulated oil in mid-1973. The evidence suggests a competitive market for domestic crude oil in which the producers, not the major oil company purchasers, have been in a strong competitive position.

The market for oil has been heavily influenced by the government's price controls. Under the two-tier price system, which has been in force since August 1973, the price of so-called "old" oil has been subject to a ceiling, while "new," "released," and "stripper" crude has been unregulated. All but one of the 17 largest oil companies is crude deficient.[127] To the extent that old oil has been purchased from independent producers by the integrated refiners, the effect of the two-tier system has been to depress posted prices. However, the companies can hardly be faulted for being anticompetitive. The real culprit is the United States government.

In preparing this section, we have talked with officials of a number of major oil companies and small refiners. All major oil companies with whom we have spoken have made crude trades with independent refiners and

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126. For example, see California Legislature, Joint Committee on Public Domain, pp. 1-12.
127. See Table 11.

producers. They have also made product trades with independent as well as major oil company refiners. The attitude among the major oil company officials was a willingness to trade with anybody as long as the price is right and the oil is of the proper type and quality. Similarly, all small refiners queried have made trades with major oil companies. None expressed any displeasure with the treatment they have received from their major oil company trading partners.

The same is true of processing agreements. These agreements are by no means an exclusive practice of the integrated oil companies, as critics have implied. Such independent refiners as Crown Central and Amerada Hess have processed crude oil supplied to them by major oil companies. The crucial variable is whether a company's refining capacity exceeds its marketing capacity. If so, it is likely to process crude oil for other companies to keep its refinery capacity fully utilized.

In most instances exchange and processing agreements do not appear to have been anticompetitive. This is not to say that these agreements will, under all circumstances, be free of competitive abuses. Occasionally, abuses do occur. For example, in 1973 Texaco contracted with Coastal States, an independent refiner, for the latter to process crude oil supplied by Texaco which Texaco would then market through its own retail outlets. Following this agreement Coastal States cut off the supplies of some of its own independent marketers serving the southeastern United States. It appeared that the purpose of this arrangement was not to utilize refining capacity more efficiently, but to enlarge Texaco's market share to the mutual advantage of Texaco and Coastal States and to the disadvantage of the independent marketers.

This exchange agreement had two major consequences. First, it resulted in a highly negative reaction among a number of southern congressmen in whose districts the independent marketers resided. The Texaco-Coastal States deal was one of several reasons for the overwhelming support for passage of the Emergency Petroleum Allocation Act in November 1973. It provided a tangible example of how big oil companies were hurting little oil companies. Second, even before the storm in Congress, the Justice Department brought suit against Texaco on the grounds that the processing agreement was anticompetitive in fact if not in intent.[128] Several months later, Texaco agreed to terminate the arrangement and the case was dropped.

Perhaps the most significant consequence of the Texaco-Coastal States agreement was that the system worked. Existing antitrust law was sufficient to reverse a processing agreement that would have been prejudicial to the independent marketing segment of the industry. Is there need, therefore, to ban or severely limit all processing agreements because a few were poorly conceived? We think not.

This leads to a second basic issue. Even if exchanges and processing agreements were anticompetitive, should they be eliminated? Or is there good reason to continue with these types of agreements while taking other steps to eliminate their anticompetitive effects?

Exchange and processing agreements provide flexibility in the refining and distribution of oil. They circumvent cross-hauling and duplication of refinery capacity and, in this way, enable lower costs of production and

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128. United States v. Texaco, Inc., et al., (S.D.N.Y. Civ. No. 73 Civ. 2608.)

distribution. They also reduce the need for new transport and terminal facilities and thus reduce the impact of crude oil operations on the environment. For this reason, the California Coastal Zone Conservation Commission has recommended that oil companies be encouraged to engage in exchange agreements.[129]

Several observers have pointed out that the alternative to exchange and processing agreements is not necessarily greater transportation and underutilization of refining capacity, but the creation of a crude oil and product market.[130] However, these observers apparently fail to realize that a market already exists. Exchange and processing agreements are market transactions. If a law were passed prohibiting these agreements, but permitting market transactions, little change in existing practices would be necessary other than adopting new names for them.[131] If, however, the law were written to exclude all forms of exchange, whether by barter or for money, the consequences could be very serious indeed. Then, American consumers would be required to pay higher prices reflecting the higher costs of refining and distributing oil.

129. Platt's Oilgram, Decemb_r 3, 1975. Ironically, the Joint Committee on Public Domain of the California Legislature has condemned exchange agreements as detrimental to the interests of the State.

130. For example, see Statement of Stephen Breyer, p. 446. See, also, Senate Antitrust and Monopoly Subcommittee Staff Report, S16405.

131. Ironically, this would be just the opposite of what occurred under the import quota system. In theory, it was illegal to buy or sell import tickets. However, they could be exchanged or swapped, something widely done throughout the industry. As a matter of form, a ticket did not have a price. However, it was difficult to find someone in the industry or the government who did not know what the current ticket price was.

The result of such a law would also be greater concentration in refining and marketing in various regions of the country. This, in turn, could lead to less competition in the industry. The Tenth Circuit Court of Appeals noted this possibility in Blue Bell Co. v. Frontier Refining Co.[132] In its decision, the court pointed out that exchanges of refined products "permitted one marketing company to do business at the back door of its competitor's refinery . . ."[133] In the absence of exchange agreements, refiners would be forced to suspend marketing in certain regions of the country where their refining capacity is limited or non-existent. Refiners would also be unlikely to compete for crude oil in regions relatively distant from their refineries. In other words, exchange agreements may actually increase rather than lessen competition in the oil industry.

This section should not be interpreted as a sweeping defense of all exchange and processing agreements. Clearly, as the Texaco-Coastal States deal showed, there is room for abuse. Where we differ with industry critics is in how best to deal with these abuses. Instead of outlawing exchange and processing agreements we think it better to assess each agreement on its merits on a case-by-case basis. There is precedent for this type of approach to the problem. Case-by-case adjudication has formed the basis of our common law system for over 800 years.

9. INTERLOCKING DIRECTORATES

One of the ways the major oil companies are able to suppress competition, it is claimed, is through the existence of an extensive network of

132. 213 F. 2d 354 (1954).
133. Ibid., p. 359.

interlocking boards of directors. Critics argue that these interlocks "serve to reinforce mutual interests and provide an opportunity for reconciling differences and achieving intercorporate harmony."[134] In addition, because of interlocks between major oil companies and large banks, new firms are said to be unable to obtain financing for refineries and other capital intensive projects.[135]

Concern over the effects of interlocking directorates is not new. Nor has this concern been directed solely at the oil industry.[136] During the early part of the Twentieth Century several congressional committees and reform groups investigated this practice and found widespread abuses resulting from it. For example, in 1912 the Stanley Committee reported that interlocking directorates were responsible for inside deals, kickbacks, and illegal rebates.[137] As a result of this and other investigations, Congress adopted Section 8 of the Clayton Act which prohibits any individual from serving on the boards of two or more competing firms.

But reformers have never been satisfied with Section 8 and for many years have advocated amendments that would strengthen it.[138] One of their major complaints is that Section 8 does not prohibit indirect interlocks.[139]

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134. John W. Wilson, "Market Structure in the Petroleum Industry," p. 328.

135. FTC Staff, Complaint Counsel's Prediscovery Statement, pp. 19-21.

136. For a historical perspective, see Staff of the House Committee on the Judiciary, 89th Cong., 1st Sess., Report on Interlocks in Corporate Management, Washington, D.C., Government Printing Office, 1965; Arthur Travers, "Interlocks in Corporate Management and the Antitrust Laws," 46 Texas Law Review, 819 (July 1968).

137. Investigation of United States Steel Corp., H. Rpt. No. 1127, 62d Cong., 2d Sess., August 1912 cited in House Judiciary Staff, p. 4.

138. Most recently in H.R. 4406 which was introduced by Congressman Harrington on March 8, 1975.

139. See, for example, letter from FTC Chairman Dixon to Congressman Cellar reprinted, in part, in House Judiciary Committee Staff, pp. 101-102.

Critics of the oil industry believe that it is these indirect interlocks that are so anticompetitive.

The staff of the House Judiciary Committee has identified three types of indirect interlocks.[140]

1. Board members from competing firms may sit on the board of a third company. For example, early in 1975 the chairmen of Exxon and Standard of Indiana were members of the board of the Chase Manhattan Bank.[141]

2. Board members of a third company may sit on the boards of competing firms. For example, directors from General Foods sit on the boards of Shell, Mobil, and Gulf.[142]

3. Finally, directors from competing firms may occupy seats on the boards of companies that are, in turn, linked by a common board member.

How do indirect interlocks suppress competition? Travers suggests (and then rejects) the possibility that interlocks may be used as a channel for information which enables collusive behavior.[143] The board room is thought to be a safe house where the chances of detection by law enforcement officials are slight. However, absent other more compelling evidence, it is difficult to condemn interlocks on this ground alone. Why would conspirators have to use the board rooms of third companies as a place in which to hatch illegal schemes? Oil industry executives can almost certainly find other, safer places in which to break the law. Indeed, the staff of the

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140. House Judiciary Committee Staff, p. 10.
141. Andrew G. Keeler, A Citizen's Oil Factbook: What Every Citizen Should Know About the Eighteen Largest Oil Companies, Washington, D.C., Center for Science in the Public Interest, 1975, pp. 19 and 34.
142. *Ibid.*, p. 8.
143. Travers, p. 848.

Federal Trade Commission asserts that the Petroleum Club in Houston serves just this purpose.[144] Even better, the oil companies might use organizations that do not have the words "oil" or "petroleum" in their names. To really insure against collusion, perhaps the government should ban membership by officials of more than one oil company in the same country club or church.

A second and more subtle way in which indirect interlocks may result in anticompetitive behavior is through manipulations by what C. Wright Mills has termed a "power elite."[145] This elite, through service on the boards of different companies, could coordinate policies to prevent competition. The elite could also control the flow of credit by sitting on the boards of financial institutions. Angus McDonald claims that:

> Oil company directors who are directors of banks and other corporations form a cozy and exclusive club where it is convenient for them to reach understandings and agreements which result in common, if not conspiratorial, action . . . . Outsiders simply do not know what goes on behind the closed doors of the financial institutions. One can reasonably suspect that in times of tight money the independent oil companies, which do not have interlocked directorships with the major banks, would find it difficult to get financing.[146]

It is also thought that directors sitting on the board of a third company can influence the policies of that company to their own companies' mutual advantage.

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144. FTC Staff, Complaint Counsel's Prediscovery Statement, p. 48.

145. C. Wright Mills, The Power Elite, Oxford University Press, New York, 1956.

146. Angus McDonald, Interlocking Oil: Big Oil Ties with Other Corporations, Washington, D.C., Center for Science in the Public Interest, 1974, pp. 7-8.

Although considerable amounts of data have been collected on the existence of indirect interlocks involving the oil industry,[147] there has been little or no analysis of these data. The House Judiciary Committee staff found in 1965 that, in comparison with other large firms, the oil companies have discouraged their directors and officers from serving on the boards of other corporations.[148] However, the staff went on to conclude:

> There is virtually no reliable current information available that will demonstrate either acceptable or undesirable effects that have resulted from the fact that common management personnel participated in, or influenced, particular business transactions. Without factual information concerning the actual operation of interlocks, "commonsense," presupposition, reliance on past proof, and abstract reasoning have been predominant in the analysis of both the virtues and evils attributed to corporate interlocks.[149]

There has been nothing since this report was issued in 1965 that would change its conclusion. Analyses of the effects of interlocking directorates have never gone beyond the finding that they exist.

In our judgment, the issue is essentially irrelevant to a serious discussion of competition in the petroleum industry. The validity of the argument against interlocks turns on two crucial assumptions. First, it is assumed that the board of directors of a major company or financial institution actually controls the firm's policy. Second, it is assumed that interlocked directors, even though usually a minority on a company's board, will be able to impose their views on the other directors and the

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147. For example, see John Wilson "Market Performance"; House Judiciary Committee Staff.
148. House Judiciary Committee Staff, pp. 120, 125 and 137.
149. Ibid., p. 229.

company's management. Also, implicit in these arguments is the view that interlocking directorates serve no useful purpose.

Practically every state corporation statute declares that "the business of the corporation shall be managed by the board of directors." However, most often this is not the case. True control is exercised either by the chairman and the president alone or by the chairman, president, and inside directors.[150] Outside directors usually do not have the time nor the expertise to contest management's policies. Instead, they act as mere advisors and consultants or as a sounding board for management's proposals.[151]

But, putting this argument aside, how likely is it that interlocking directors will be able to influence a company's policy? The answer is: not very. In most companies outside directors are to be seen and not heard. "Professional courtesy" and "corporate manners" are the norm. Outside directors who ask management embarrassing questions, let alone attempt to influence policy, often find that they are still outside but no longer directors.[152]

Interlocking directorates do serve a useful purpose. Because what happens in one company and industry affects what happens in other companies

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150. Edward S. Mason, "The Apologetics of Managerialism," The Journal of Business, January 1958, p. 1; House Judiciary Committee Staff, p. 230. Because of this fact, the staff of the Judiciary Committee argued that "interlocks of officers and other senior employees probably are of more consequence on matters of antitrust significance than are interlocks of directors," House Judiciary Committee Staff, pp. 230-1. However, we know of no one who has even considered this aspect of the problem with respect to the oil industry.

151. Myles L. Mace, Directors: Myth and Reality, Boston, Harvard Graduate School of Business Administration, 1971, pp. 43-68.

152. Ibid., pp. 54-57.

and industries, there is a need for an interindustry flow of information which interlocking directorates can provide. Interlocks involving financial institutions provide expertise on financial matters. For this reason, directors and officers of major financial institutions are often preferred candidates for a board membership. By the same token, the expertise that an officer-director of an oil company possesses can also make him a valuable outside director.[153]

Only a total cynic would believe that the purpose of all or even most interlocking directorates is to establish and exercise monopoly power. However, those who want to find a conspiracy in the oil industry usually succeed in convincing themselves that the conspiracy does exist. No other argument that anticompetitive behavior exists in the oil industry seems so empty and so misanthropic.

10. BARRIERS TO ENTRY

One essential element of monopoly power is the ability to exclude new firms from the marketplace. Critics claim that barriers to entry by new firms exist at all levels of the petroleum industry.[154] Without barriers to entry, it is asserted, "existing excess profits would attract new firms which would increase supply at all levels and . . . eliminate the excess profits."[155] We leave the question of profitability to the next section. Here, we focus on the existence or non-existence of barriers to entry.

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153. Ibid., pp. 13-23. Mace quotes the president of a medium-sized corporation as saying that he found advice by an oil industry executive on real estate matters especially valuable. The corporation president attributed this to the executive's experience in buying and leasing service stations throughout the Nation.

154. FTC Staff, Preliminary Report, p. 25.

155. Ibid., p. 25.

There is no evidence of restrictions on entry in the production and marketing sectors of the industry. Independents continue to play an important role in the producing sector, despite greater dependence on high cost, high risk producing areas such as the outer continental shelf.[156] In marketing, capital requirements are low. Furthermore, the rapid turnover in station ownership suggests that anyone wishing to enter this sector has many opportunities to do so.

This is not the case in refining, however. Here there are substantial barriers to entry and, for this reason, most of the controversy has centered on the refining segment of the industry. Capital requirements are high; today, new refineries cost anywhere between $2,000 and $2,500 per barrel per day of capacity.[157] A new refinery also requires an assured supply of crude oil. With the uncertainties in both the domestic and world crude market, obtaining a guaranteed supply is no easy task. Finally, even if the would-be entrant has obtained the necessary financial backing and crude supply, opposition from local and environmental groups may prevent construction of a refinery. These groups have managed to block the construction of at least 16 new refineries during the past several years.[158]

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156. Duchesneau, p. 102. However, the Federal Trade Commission staff believes that, over time, barriers to entry in production will increase. For this reason, the staff has recommended several changes in federal leasing policy. See Federal Trade Commission Staff, Federal Energy Land Policy: Efficiency, Revenue and Competition, Washington, D.C., U.S. Government Printing Office, October 1975.

157. Jerome E. Hass, Edward J. Mitchell and Bernell K. Stone, Financing the Energy Industry, Cambridge, Mass., Ballinger Publishing Company, 1974, p. 32.

158. Statement of Donald O'Hara, President of the National Petroleum Refiners Association before the Senate Antitrust and Monopoly Subcommittee, November 12, 1975 (mimeo), p. 3. The authors are especially indebted to Mr. O'Hara for his assistance in preparing this section.

Not surprisingly, critics argue that the major oil companies have been primarily responsible for keeping new entrants out of refining. The FTC staff charges that the majors "have consistently acted to erect and maintain" barriers to entry in refining.[159] Allvine and Patterson claim that, "since 1950 the integrated oil companies have taken over several of the important independent refineries and there have been built no new independent refineries with over 50,000 barrels per day capacity."[160]

The FTC staff lists a number of ways in which the majors have been able to keep new firms out of refining.[161] Through import quotas, market demand prorationing and the ownership and control of pipelines the majors have allegedly been able to deny a potential entrant an assured supply of crude oil. Through interlocking directorates between majors and large financial institutions, the majors have denied financing to would-be refiners. Finally, the staff alleges that, by their control of gasoline marketing, the majors have also kept independent firms from entering refining.

Just how effective have the majors been in keeping new entrants out of refining? Since World War II, a number of small refineries have been built that specialize in products like asphalt or lubricating oils. However, most commentators define entry in refining as achieving a capacity of 50,000 bpd or more. In Table 13 we have listed those independents that have entered the refining industry since 1950 using this definition of entry. There are 13 of these companies, of which seven initially acquired existing refineries, while six built new refineries.

159. FTC Staff, Complaint Counsel's Prediscovery Statement, p. 13.
160. Allvine and Patterson, p. 216.
161. FTC Staff, Preliminary Report, pp. 25-27 and Complaint Counsel's Prediscovery Statement, pp. 13-21.

TABLE 13

Companies Entering the Refining Sector
and Constructing More Than 50,000 bpd of
New Capacity Since 1950

Company	1975 Capacity (bpd)
*Amerada-Hess	538,500
American Petrofina	200,000
*ECOL (under construction)	200,000
Coastal States	162,982
*Union Pacific	140,453
Murphy	129,500
*Commonwealth	110,000
*Koch	106,990
Tenneco	97,500
Charter	82,900
Toscopetro	71,570
Tesoro	64,000
*Hawaiian Independent	60,000

*Entry achieved through construction of a new refinery.

Source: Donald O'Hara, President, National Petroleum Refiners Association.

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Thus, the Allvine and Patterson charge that no new independent refineries have been built since 1950 is dead wrong.[162] The FTC staff has been more careful with its facts, however. It has merely asserted that "there has been no significant new entry into the refining of petroleum products" since 1950.[163] The issue here is: Does the entry of 13 large independents in the last 25 years qualify as "significant"? We believe it does.

However, the real issue is not whether the number 13 is significant or not. Instead, it is whether the major oil companies have actually erected and maintained entry barriers in refining. This requires a closer examination of the FTC charges.

We begin with charges relating to crude oil supply. Because import quotas and pipeline ownership have already been discussed, we focus on market demand prorationing. The Commission staff argues that market demand prorationing--the system whereby producing states set production levels to "balance" supply and demand--was used by the major oil companies to keep independents out of refining. Prorationing supposedly denied independents an assured supply of crude oil. But the staff never explains exactly how the majors accomplished this feat. This omission is perhaps understandable, for as McCullough points out, prorationing actually aided the would-be entrant in obtaining crude supplies. Under market demand prorationing, all that was necessary was to petition the state conservation authorities to have the allowable production limitation raised.[164]

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162. Unfortunately, the Allvine and Patterson allegation has had a real impact on policymakers. For example, Senator Gary Hart cited it in Senate debate on divestiture. See 121 Cong. Rec. S17690 (daily ed., October 7, 1975).

163. FTC Staff, Complaint Counsel's Prediscovery Statement, p. 13.

164. U.S. Senate, Committee on Interior and Insular Affairs, Department of the Treasury Staff Analysis of the Preliminary FTC Staff Report, (by Douglas McCullough), Washington, D.C., (Committee Print), 1973, p. 51.

The charge that interlocking directorates have been used to deny financing to independent refiners does not pass muster either. For example, Tesoro has grown and prospered over the last ten years partly as a result of loans from the Continental Illinois Bank of Chicago.[165] Yet, Texaco, Continental, and Standard of Indiana all have had directors serving on Chicago Continental's board.[166]

Besides the six independent refiners that have built grass roots refineries since 1950 and now have capacities greater than 50,000 bpd, there have been ten new independent refineries built in the last twenty-five years with capacities of less than 50,000 bpd.[167] There have also been numerous expansions of existing refineries by independents. One of the most dramatic examples is Coastal States which bought a 29,000 bpd refinery in the sixties and later expanded it to over 160,000 bpd.[168] If interlocking directors have been trying to deny financing to independents, they have not been very successful.

Finally, the staff of the Federal Trade Commission contends that the major oil companies have kept independents out of refining by controlling gasoline marketing. This has been done, it is claimed, by segmenting the market for retail gasoline into two markets, one for branded gasoline and one for nonbranded gasoline, and then restricting the opportunity to supply branded outlets to the majors' refineries and "cooperating independent refineries."

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165. See "Under the Gun," Forbes, September 1, 1975.
166. McDonald, Interlocking Oil, pp. 15, 23 and 31.
167. Information supplied by Donald O'Hara.
168. Cited in letter to Hon. Phillip Hart from Donald O'Hara, Hearings on the Industrial Reorganization Act, p. 6276.

This argument makes little sense. First, as we have demonstrated in Section 2, the majors hardly control gasoline marketing. Even more difficult to accept is the charge that the major oil companies have divided the gasoline market into branded and nonbranded markets. It has been a chronic excess capacity in refining that has led to spot market sales and has done much to create the branded/nonbranded distinction. However, the Commission has also done its part. In 1967, the FTC issued a policy statement that it would not look favorably on companies that priced branded gasoline competitively with nonbranded gasoline.[169] Thus, the FTC has actually helped perpetuate the branded/nonbranded distinction for which it is now prosecuting the major oil companies.

In sum, there have been and continue to be barriers to entry in refining. However, these barriers do not appear to have been insurmountable. Nor have they been the result of the sinister workings of the major oil companies. Instead, they are a result of technological and economic factors inherent in the refining business. Or, they are a product of often misguided or uninformed government regulation. None of these barriers will be lowered by breaking up or otherwise prosecuting the major oil companies.

11. OIL INDUSTRY PROFITS

The evidence presented thus far does not support the widely held view that the oil industry is monopolistic. What about the industry's profits?

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169. Cited in Donald O'Hara, "Let's Look at the Record" speech before Symposium on the Energy Crisis sponsored by the Oil, Chemical and Atomic Workers Union, Washington, D.C., March 14, 1974, p. 12.

Generally, when monopoly exists, profits are abnormally high. But, as Mitchell notes, ". . . the connection between monopoly and profits is a highly qualified one. Perhaps the strongest statement that can be made is that the persistence of abnormally high profits over long periods of time in a particular industry makes it more likely that the industry is monopolistic than competitive."[170]

Extraordinarily high profits over the long run may indicate circumstances other than monopoly. For example, an industry may be subject to abnormal risk. As a result, companies in that industry require a higher long-run average rate of return than do companies involved in less risky undertakings. Or, for some reason, an industry may have extraordinarily competent managements. The higher profits of the industry may simply reflect the greater effectiveness of its managers. In other words, a high rate of profits over the long run is only an indication and not proof of monopoly.

It has become fashionable to condemn oil companies for their exorbitant profits. While one Senator calls the oil industry's profits "unconscionable" and "indecent," another claims that the oil companies are "selling less but making more." To the man on the street, recent profit reports by the oil companies are proof that the public has been ripped off.

Needless to say, such simplistic thinking is likely to fall short of the truth. First, historically the oil industry has not been especially profitable. The rate of return of the oil industry has been, over the long

170. Edward J. Mitchell, U.S. Energy Policy: A Primer, American Enterprise Institute, Washington, D.C., 1974, p. 90. Appendix B to Mitchell's Primer provides a good discussion of competition in the oil industry.

run, just about equal to the average rate of return for all U.S. industry. Second, recent "windfall" profits were neither as high as critics have claimed, nor have they been sustained. Third, oil company profits must be higher than they have been in the past. The oil industry is a rising cost industry and will be able to finance higher rates of investment only if its profits improve.

A fair test of the oil industry's profitability is to compare its return to investors with the return to investors in other industries. Two measures are useful for this purpose. One is the rate of return on investment (ROI). The ROI measures dollar profits as a percentage of investment. Table 14 presents ROIs for 29 manufacturing industries over four different time periods. During all four periods oil industry profitability was only slightly above the average for all manufacturing industries. If, on this finding, regulation of the oil industry can be justified, then so can regulation of the drug, tobacco, automobile, and printing and publishing industries.

A second measure of profitability is the after tax return on stockholders' equity (ROE).[171] The results of a study by Forbes Magazine, presented in Table 15, suggest that the energy industry's return on equity, as well as its return on investment, was very near the average for all industry. Interestingly, in their five year average return on equity,

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171. The financial statements of many companies in the petroleum industry are not readily comparable with statements of companies in other industries because of the method of accounting used by most major oil companies. "Because of the understatement of the asset and equity accounts caused by this method of accounting, one of the most common business profits 'yardsticks'--'return on equity'--cannot be computed for petroleum companies on a comparable basis with other industries." Testimony of Randal B. McDonald, Partner, Arthur Anderson & Co., Hearings on Market Performance, pt. 5, p. 18. Mr. McDonald goes on to say that, between 1968 and 1972, the ROE of petroleum companies, when based on full cost accounting, averaged about 25 percent less than the ROE for all manufacturing companies.

TABLE 14

RETURN ON INVESTED CAPITAL
MANUFACTURING INDUSTRIES

Industry	16-Year Average 1958-73 PERCENT	RANK	10-Year Average 1964-73 PERCENT	RANK	5-Year Average 1969-73 PERCENT	RANK	3-Year Average 1971-73 PERCENT	RANK
Average, all Manufacturing industries	9.3		9.8		9.4		9.6	
Drugs	16.7	1	17.0	1	17.0	1	16.9	1
Instruments and related products	13.6	2	14.5	2	13.6	2	13.7	2
Motor vehicles and equipment	13.0	3	12.9	3	11.4	4	12.9	3
Tobacco manufacturers	11.8	4	12.0	4	12.0	3	12.3	5
Transportation equipment	11.4	5	11.3	5	9.8	10	10.9	7
Chemicals and allied products	11.0	6	11.1	6	11.1	5	11.6	6
Printing and publishing	10.0	7	10.5	7	10.5	7	10.4	9
PETROLEUM INDUSTRY	10.0	8	10.3	9	10.2	8	10.4	8
Electrical machinery, equipment and supplies	9.7	9	10.0	11	9.5	12	9.6	14
Other machinery	9.6	10	10.4	8	9.7	11	9.8	13
All manufacturing corporations	9.4	11	9.8	12	9.5	13	9.9	11
Basic chemicals	9.3	12	9.3	16	9.0	16	9.6	15
Lumber and wood products except furniture	8.9	13	10.0	10	10.9	6	12.8	4
Food and kindred products	8.8	14	9.3	15	10.0	9	10.0	10
Furniture and fixtures	8.6	15	9.7	13	9.3	15	9.8	12
Rubber and miscellaneous plastic products	8.5	16	8.9	19	8.5	19	9.1	18
Metalworking machinery and equipment	8.4	17	9.5	14	7.5	23	6.4	29
Other fabricated metal products	8.4	18	9.3	17	8.6	18	9.0	19
Stone, clay and glass products	8.3	19	8.3	24	8.3	20	9.3	17
Apparel and other finished products	8.2	20	8.9	18	8.7	17	8.8	20
Miscellaneous manufacturing	8.2	21	8.6	21	8.2	21	8.1	21
Primary nonferrous metals	8.0	22	8.4	23	7.7	22	7.0	25
Alcoholic beverages	7.9	23	8.9	20	9.4	14	9.5	16
Aircraft and parts	7.8	24	8.0	25	6.8	26	7.5	22
Leather and leather products	7.8	25	8.5	22	7.1	25	6.6	27
Paper and allied products	7.6	26	7.8	26	7.5	24	7.4	23
Primary metal industries	7.1	27	7.2	27	6.8	27	6.7	26
Textile mill products	6.6	28	7.2	28	6.6	28	7.1	24
Primary iron and steel	6.4	29	6.4	29	6.1	29	6.5	28

Source: Testimony of the Honorable William A. Simon, Secretary of the Treasury, Hearings on Oil Profits and their Effects on Small Business and Capital Investment Needs of the Energy Industries before the Subcommittee on Government Regulation of the Senate Select Committee on Small Business, 93d Congress., 2d Sess., 1974, p. 145, based upon information provided by the Federal Trade Commission.

TABLE 15

PROFITABILITY OF VARIOUS U.S. MANUFACTURING INDUSTRIES

	RETURN ON EQUITY			RETURN ON TOTAL CAPITAL		
	5-Year Average (percentage)	Industry Rank	Latest 12 months (percentage)	5-Year Average (percentage)	Industry Rank	Latest 12 months (percentage)
Consumer Goods: Health Care	17.2	1	17.1	15.1	1	14.5
Consumer Goods: Personal	14.5	2	15.8	13.3	2	10.8
Financial	14.3	3	14.0	7.3	23	6.8
Leisure & Education	13.9	4	14.3	10.2	5	10.5
Construction & Drilling	13.1	5	12.9	8.2	15	9.2
Consumer Goods: Food & Drink	12.9	6	13.1	9.5	9	9.8
Distribution: Retailers	12.8	7	12.3	9.7	8	8.9
Banks	12.6	8	12.9	10.9	4	9.9
Utilities: Natural Gas	12.6	8	11.9	6.9	26	6.9
Consumer Goods: Household	12.2	10	12.9	9.2	10	9.7
Distribution Wholesalers	12.1	11	13.3	10.0	6	9.9
Nonferrous Metals	11.8	12	12.0	8.7	13	9.3
Electronics	11.7	13	13.8	10.0	6	11.3
Insurance	11.7	13	11.5	11.6	3	11.7
Information Processing	11.4	15	11.5	8.8	11	8.9
Multicompanies Conglomerates	11.2	16	13.1	7.7	21	7.8
Utilities: Electric & Telephone	11.1	17	10.9	5.8	27	5.8
Automotive	11.0	18	12.7	8.6	14	9.0
ENERGY	11.0	18	13.0	8.2	15	9.3
Industrial Equipment	11.0	18	12.1	7.8	19	8.3
Aerospace & Defense	10.9	21	10.9	7.7	21	7.1
Building Materials	10.7	22	13.3	8.8	11	10.3
Chemicals	10.5	23	12.8	7.8	19	8.4
Distribution: Supermarkets	10.4	24	8.1	7.9	17	5.8
Consumer Goods: Apparel	9.6	25	10.5	7.2	24	8.2
Multicompanies; Multi-Industry	9.5	26	11.5	7.9	17	9.2
Forest Products & Packaging	9.4	27	12.9	7.1	25	8.1
Steel	6.1	28	9.0	5.1	28	6.5
Transportation: Surface	5.4	29	7.4	4.7	29	4.9
Transportation: Airlines	4.8	30	9.6	3.1	30	5.2

TABLE 15

	RETURN ON EQUITY			RETURN ON TOTAL CAPITAL		
	5-Year Average (percentage)	Industry Rank	Latest 12 months (percentage)	5-Year Average (percentage)	Industry Rank	Latest 12 months (percentage)
INDUSTRY MEDIAN	11.4		12.8	8.2		9.0
INDUSTRY AVERAGE	11.3		12.2	8.5		8.7

Source: Forbes, January 1, 1974, pp. 112.

natural gas utilities have, according to the Forbes survey, done somewhat better than energy companies as a group. Perhaps there are advantages in being regulated as utilities.

Prior to 1974, oil industry profits were not excessive. However, this does not answer charges that the oil companies have profiteered from shortages created by the Arab embargo and price increases by OPEC. During and after the embargo, oil companies realized substantially greater returns from their operations. According to the First National City Bank of New York, oil industry profits for the first half of 1974 were 60 percent higher than for the first half of 1973.[172] This increase was more than twice as large as the 26 percent average increase recorded for all industries. For this reason, many critics have concluded that the recent surges in profits are the result of gouging by the majors made possible by shortages of oil.

There is no question that these increases were substantial. However, were they unconscionable? To some extent, higher profits during 1973-74 were a statistical illusion. For most oil companies, higher profits in the second half of 1973 and 1974 followed extraordinarily low profits in 1972 and the first half of 1973. Had profits been expressed as a percentage change from the median, or a five or ten year average, the rate of increase would have been much lower.

Another way to assess the industry's "windfall" gains is to compare them with performance in other industries. In 1973, the oil industry as a whole registered a 53 percent increase in profits over 1972.[173] By contrast,

172. Cited in testimony of the Honorable William E. Simon, Secretary of the Treasury, Hearings on Oil Profits, p. 130.

173. The following discussion draws heavily on an unpublished study of industry profits prepared by the Treasury Department in mid-1974.

during the same period, the metal working machinery industry realized a 396 percent increase. In the primary non-ferrous metals industry and in the aircraft and parts industry, the profit increases were 101 and 109 percent respectively. The oil industry ranked tenth out of 29 industries examined in a recent Treasury Department study of the change in profits between 1972 and 1973. The rate of increase in its profits was above average; however, it was not extraordinary.

Before passing judgment, one should also break down the increase in profits into its components. Most of the recent increase has either resulted from business other than the production, refining, and sale of oil or was due to circumstances beyond the control of the oil companies.

First, most of the increase in the profits of the large integrated oil companies resulted from a substantial increase in the value of inventories held by the companies. This, in turn, was caused by inflation, devaluation of the dollar and the OPEC price hikes. However, when these inventories are replaced at now higher prices the inventory profits will disappear. Likewise, when the dollar was devalued in 1973, those oil companies with foreign assets realized a further accounting profit. All real property and cash denominated in a foreign currency was immediately worth more in dollars. What is significant about these accounting gains is that they were due to non-recurring events. Barring further increases in the price of crude oil or another dollar devaluation, these gains were a one-time phenomenon. Consequently they are unlikely to generate the cash flow necessary for new capital investments by the industry. Nor are they likely to encourage the long-term investment needed in the industry.

Second, many oil companies are horizontally integrated. As a rule, these companies earned higher profits from businesses other than oil. In 1973, tanker rates soared to record levels. This substantially increased the 1973 profit levels of those oil companies that are also in the tanker business. Also, the strong cyclical upturn in demand for petrochemicals in 1973 and early 1974 contributed to the higher profits of those oil companies that are also in the petrochemical industry.

The Treasury Department has collected information on the profit increases of nineteen large oil companies. Its data are presented in Table 16. Between the first quarter 1973 and the first quarter 1974, the total consolidated profits of the nineteen representative companies rose 76 percent. Over half of this increase was due to revaluation of inventories. The profits of chemical operations also increased sharply, accounting for another 17 percent of the total increase. Higher profits from tanker operations and gains from currency fluctuations together contributed collectively another eight percent of the increase.

When the profits from non-recurring events and non-petroleum activities are aggregated, they account for nearly three-fourths of the total increase in oil industry profits between 1973 and 1974. In other words, once these special circumstances are isolated, the recent increase in profits of the oil industry does not seem that high or pernicious.

Moreover, because these high levels of profits were a result of special circumstances they have not been sustained. Data presented in Tables 17 and 18 clearly illustrate that since mid-1974 profits of the largest oil companies

TABLE 16

PETROLEUM INDUSTRY PROFITS
19 Company Data

	First Quarter ($ millions) 1973	1974	Increase ($ mill.)	(percent)	Percent of Total Increase
Total consolidated corporate profits	1,768	3,110	1,341	76	100
Inventory profits	14	712	698	4,901	52
Gains from currency fluctuations	16	65	49	315	4
Profits (losses) on tanker operations	(9)	50	59	n/c	4
Profits on chemical operations	94	315	221	236	17
Other nonpetroleum profits (losses)	7	(27)	(34)	n/c	(3)
Petroleum profits, ongoing operations	1,646	1,994	348	21	26

Source: Testimony of the Honorable William A. Simon, Secretary of the Treasury, Hearings on Oil Profits, p. 146, based upon information provided by the Department of the Treasury. n/c means that the rate of increase cannot be calculated meaningfully.

TABLE 17

Net Profits of Leading U. S. Oil Companies
(Millions of Dollars)

Rank By Assets	Company	4th Quarter 1973	1st Quarter 1974	2nd Quarter 1974	3rd Quarter 1974	4th Quarter 1974	1st Quarter 1975	2nd Quarter 1975	3rd Quarter 1975
1	Exxon	784.0	705.0	850.0	800.0	778.0	590.0	535.0	550.0
2	Texaco	453.5	589.4	460.4	378.4	319.8	178.4	175.6	232.8
3	Mobil	271.6	258.6	367.4	277.8	136.3	186.2	195.7	231.0
4	Gulf	230.0	290.0	250.0	275.0	185.0	195.0	160.0	175.0
5	Socal	283.1	293.0	285.0	299.5	293.0	169.0	183.4	191.0
6	Amoco	121.4	219.0	280.0	296.5	174.8	146.2	232.0	213.0
7	Tenneco	80.9	84.0	---	73.4	76.4	73.0	---	---
8	Arco	91.7	93.9	139.7	144.0	96.9	67.5	70.4	98.1
9	Shell	79.4	121.8	124.5	216.0	158.2	104.4	118.0	159.8
10	Continental	89.3	109.1	100.4	120.2	61.8	69.4	77.9	82.6
11	Sun	75.0	90.8	127.3	105.7	54.0	33.3	53.3	73.7
12	Phillips	86.7	80.9	123.8	112.9	84.5	54.7	111.2	72.3
13	Union	51.0	73.0	79.6	79.9	55.5	40.1	42.0	82.2
14	Occidental	---	67.8	92.6	86.8	---	73.8	43.7	29.4
15	Getty	52.6	73.6	62.2	86.5	58.6	41.0	68.3	58.5
16	Cities Service	42.1	68.8	53.8	45.8	46.4	27.0	24.2	39.9
17	Sohio	11.6	22.6	50.3	37.0	28.6	22.2	38.1	32.7
18	Amerada Hess	104.5	49.8	46.0	38.2	67.8	27.6	33.5	28.9
19	Marathon	46.9	30.6	50.2	48.7	40.9	16.2	32.6	33.4
20	Pennzoil	24.1	41.3	37.6	33.7	---	26.9	26.9	27.1
21	Ashland	34.4	19.4	32.0	27.3	38.6	19.5	26.8	38.0
22	Kerr-McGee	---	23.6	37.4	32.2	31.0	28.0	38.5	32.6
23	Murphy	13.9	25.5	17.9	12.2	13.0	8.6	9.3	10.5
24	Skelly	16.8	19.7	26.9	31.1	35.5	17.0	26.5	24.8
25	Superior	---	14.5	---	---	---	---	---	---
26	American Petrofina	16.7	13.1	---	31.9	22.4	4.6	9.6	16.7
27	Louisiana Land	---	28.0	---	---	---	---	---	---
28	Clark	8.1	---	9.3	(3.4)	(7.6)	---	(2.7)	3.0
	Apco	---	3.0	---	---	---	---	3.0	---
	Commonwealth	---	---	---	(14.7)	---	---	---	---
	Fina	---	---	19.2	---	---	---	---	---
	Mapco	---	8.7	---	---	---	---	---	---
	Quaker State	---	5.3	5.8	---	---	---	6.4	---
	Tesoro	12.6	---	18.9	---	---	---	---	---
	Total of Firms in the Sample:	3,082.0	3,523.9	3,748.2	3,672.6	2,849.5	2,219.7	2,339.1	2,537.0

Source: Oil and Gas Journal: February 18, 1974; May 13, 1974; August 12, 1974; November 11, 1974; February 17, 1975; May 5, 1975; August 11, 1975; November 10, 1975.

TABLE 18

Net Profits of Leading U. S. Oil Companies
(Percentage Change from the Same Quarter During the Previous Year)

Company	4th Quarter 1973	1st Quarter 1975	2nd Quarter 1974	3rd Quarter 1974	4th Quarter 1974	1st Quarter 1975	2nd Quarter 1975	3rd Quarter 1975
Exxon	59.0	38.8	66.7	25.4	-1.1	-11.4	-34.3	-31.2
Texaco	70.1	123.2	72.1	23.1	-29.5	-66.0	-52.2	-37.9
Mobil	68.2	65.9	99.5	20.2	-51.0	-28.0	-46.7	-16.8
Gulf	98.3	75.7	28.2	31.0	-19.6	-32.8	-49.2	-36.3
Socal	94.2	91.5	56.6	32.6	3.5	8.3	-22.5	-32.7
Amoco	52.7	81.0	130.8	101.3	43.9	-33.2	-17.1	-28.1
Tenneco	14.4	57.2	---	37.8	-5.5	-13.1	---	---
Arco	47.4	86.7	104.3	140.9	5.7	-28.1	-49.6	-31.8
Shell	-1.5	51.9	39.1	158.4	99.3	-14.3	-5.2	-26.0
Continental	91.6	129.9	106.2	121.8	-30.8	65.2	-17.3	-38.1
Sun	59.6	84.8	163.0	84.5	-28.0	-63.3	-58.2	-30.2
Phillips	127.6	86.4	166.8	109.6	-2.5	-49.6	-10.2	-35.9
Union	55.5	90.7	98.0	57.6	8.8	-45.1	-47.2	2.8
Occidental	---	717.6	292.8	297.3	---	26.3	-45.8	-60.0
Getty	115.0	172.7	167.2	171.9	11.4	-44.3	9.9	-32.3
Cities Service	49.8	87.0	76.4	75.5	10.0	-59.0	-49.8	-7.8
Sohio	-39.9	29.1	18.9	105.6	146.6	-1.8	1.6	-12.0
Amerada Hess	471.9	35.8	38.0	-12.9	-35.1	-44.6	-27.1	-24.3
Marathon	92.8	52.5	147.2	49.9	-27.6	-47.0	-35.0	-31.3
Pennzoil	68.4	110.7	95.0	80.3	---	-12.4	-18.6	-3.2
Ashland	52.2	22.0	44.5	14.2	12.2	12.8	-7.3	12.4
Kerr-McGee	---	98.9	96.4	143.7	65.3	102.3	1.1	-2.6
Murphy	181.0	232.7	52.8	-19.7	-6.8	-40.9	-52.0	-46.4
Skelly	31.3	97.0	198.9	280.0	111.3	-13.7	-1.5	-20.2
Superior	---	208.5	---	---	---	---	---	---
American Petrofina	218.2	176.3	---	247.6	34.0	-64.8	-50.0	-47.6
Louisiana Land	---	79.1	---	---	---	---	---	---
Clark	140.8	---	10.2	-137.5	-193.8	---	-148.8	---
Apco	---	240.1	---	---	---	---	12.0	---
Commonwealth	---	---	---	-281.3	---	---	---	---
Fina	---	---	205.5	---	---	---	---	---
Mapco	---	50.4	---	---	---	---	---	---
Quaker State	---	47.9	22.4	---	---	---	8.8	---
Tesoro	183.5	---	324.2	---	---	---	---	---
Total of Firms in the Sample:	69.9	78.4	80.2	49.8	-7.7	-29.3	-34.5	-2.94

Source: Oil and Gas Journal: February 18, 1974; May 13, 1974; August 12, 1974; November 11, 1974; February 17, 1975; May 5, 1975; August 11, 1975; November 10, 1975.

have not only leveled off, but have declined significantly.[174]

During the third quarter of 1974, profit levels were still supported by higher domestic oil and gas prices and the favorable performance of the petrochemicals industry. However, higher taxes, higher costs, lower demand for products, lower production rates, and the absence of further substantial inventory profits began taking their toll. The rate of increase in profits began slowing down noticeably.[175]

By the fourth quarter 1974 oil profits were actually falling. A strong chemical sector and higher prices for crude oil and natural gas tended to bolster earnings. However, declining international earnings and softer domestic demand, together with lower refined product prices, higher taxes, and rising costs largely offset these gains. Indeed, the poor fourth quarter pulled projected 1974 earnings down for nearly all major oil companies. Significantly, the five "international giants" performed less satisfactorily than firms that had invested predominantly in the United States.[176]

Reports for 1975 indicate that the profits erosion has continued. At the end of the first quarter, for example, Petroleum Intelligence Weekly reported:

> Profits for large United States oil firms with mainly domestic operations followed closely the trend set by the American

174. It is especially important to realize here that the data in Table 17 obscure the extent of the decline. A company that earned $50 million in 1973 and $100 million in 1974 realized a 100 percent increase. If that same company earned $50 million again in 1975, its profits would fall by only 50 percent. The Oil and Gas Journal explained the situation cogently: "Under this system, profit declines can never match 'the obscenity of profit increases.'" Editorial, Oil and Gas Journal, August 11, 1975.

175. Oil and Gas Journal, November 11, 1974, p. 124.

176. Oil and Gas Journal, February 17, 1975, pp. 38-39.

> international majors; sagging demand and slackening chemical operations took their toll. In the aggregate, profits tumbled 33 percent for 12 large, mainly domestic firms. This compares with a 30.4 percent decline for the five U.S. international majors.[177]

The major reason for the spectacularly poor performance in 1975 was the elimination of the percentage depletion allowance for the largest oil companies. Some firms were also hurt by the Administration's Old Oil Entitlements Program and increases in the crude oil import license fee. Slack demand for many refined products also contributed to lower profit levels.[178]

During the second and third quarters of 1975 domestic companies did somewhat better than U.S.-based internationals. However, the profits of almost all companies were substantially lower than in comparable quarters of 1974. The reason: the same as before--government policies and slack demand for products.[179]

One final point deserves attention here. Throughout 1973 and into 1974, it appeared that the integrated international oil companies were realizing greater profits on foreign than domestic operations. The principal reason for this was stronger demand and tighter supply abroad than at home. Especially in Europe, the international oil companies suddenly realized profits on foreign refining and marketing operations which had not been realized for years. Fortunately for the United States, this situation

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177. Petroleum Intelligence Weekly, May 5, 1975, p. 5.

178. Ibid. Profits increased significantly during the first quarter of 1975 for one of the largest oil companies, Continental. This was a result, primarily, of its heavy investment in coal. The coal industry, now free from government price controls, has been performing reasonably well.

179. Petroleum Intelligence Weekly, August 4, 1975, p. 4 and November 3, 1975, pp. 8-9. See, also, Oil and Gas Journal, August 11, 1975, p. 26.

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has not persisted. By mid-1974, there was considerably less divergence between the foreign and domestic profit rates of the major international oil companies. Whether this favorable situation continues depends, to no small extent, on the policies of the U.S. Government.

By most recent estimates, the future capital needs of the petroleum industry will be formidable.[180] Because it is tied to an increasingly scarce resource, the oil industry faces increased production costs over time. In 1973, the Chase Manhattan Bank estimated that, in order to meet its projected capital requirements, the petroleum industry will need an annual increase in after-tax profits of 18 percent for the next fifteen years.[181] Over the past fifteen years, the industry's after-tax profits increased by only 7.6 percent annually. Put differently, the petroleum industry will require a 16.5 percent return on equity for the next fifteen years compared to the average 10.6 percent return on equity realized during the previous fifteen years. If the oil companies are to meet anticipated demand for their products, their operations must become more, not less, profitable.

In conclusion, the oil industry has not been especially profitable. It has, in fact, done scarcely better than the average for all industry. During the past two years, the industry enjoyed a substantial increase in profits. However, it then suffered a substantial drop in profits, something its detractors, particularly those in the Congress, seem to have ignored.

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180. See Hass, Mitchell and Stone, Chapter 3.

181. Chase Manhattan Bank, "The Energy Shortage and Worldwide Energy Needs," New York City, Chase Manhattan Bank, 1973.

Yet, industry profits must improve substantially if the supply of petroleum products is to keep pace with demand and the Nation is to become reasonably self-sufficient in oil.

12. CONCLUSION

There would seem to be little reason for special regulations being imposed on the oil industry other than normal antitrust laws generally applicable to all industries. The oil industry is one of the least concentrated in the United States. There is no evidence that the major oil companies have expanded their share of the marketplace at the expense of independents. Indeed, the evidence, if anything, suggests the opposite. Nor, as a rule, does it seem that the majors have used vertical and horizontal integration, joint ventures, exchange and processing agreements, or interlocking directorates to engage in anticompetitive practices. Finally, oil industry profits, when viewed in their historical perspective, have not been excessive; nor were recent short-lived increases in profits "unconscionable."

Why, then, are the major oil companies everyone's villain? What has brought about the current state of affairs where Congress and a number of state legislatures seem determined to enact punitive legislation that can only discourage needed investment by the major oil companies and dissuade the majors from doing what is necessary if the national goal of greater self-sufficiency in oil is to be achieved?

One important reason can be summarized in a word--bigness. Big oil is big. And it is also highly visible. In terms of total sales, four of the

top ten, eight of the top 25, and twelve of the top fifty companies in the United States are major oil companies. (See Table 19.) In terms of assets, net income, stockholders' equity, and total profits, the presence of the majors among the largest U.S. companies is even more pronounced. Yet, if one looks at measures that might indicate the presence of monopoly, such as net income as a percentage of both sales and stockholders' equity, or total return to investors, the major oil companies have generally lagged behind other large companies. (Again, see Table 19.) Exxon, which is second in sales and first in assets, is 74th in total return to its investors. Mobil, which is seventh in both sales and assets, ranks 235 in return to its investors. Bigness is not a crime--at least at present.[182] The evidence strongly suggests that the major oil companies' bigness has not been associated with anti-competitive behavior.

Yet, the regulatory face of federal energy policy has been dominant since the embargo and threatens to become more dominant in the future. Even the Federal Energy Administration has been preoccupied with regulation at the expense of other national goals, particularly increased productive capacity and greater self-sufficiency in oil.[183] There is now growing concern over whether the current climate is sufficiently conducive for the major oil companies to undertake needed investment in the industry.[184]

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182. That is, at least under the basic antitrust statute of the United States, the Sherman Act. See Professor (now Solicitor General) Robert Bork's insightful analysis in "Legislative Intent and the Policy of the Sherman Act," 9 Journal of Law and Economics 7 (October 1966).

183. This theme is developed further in William A. Johnson, "Federal Energy Policy: A Conflict of Interests," in Kalter and Vogley, eds., forthcoming.

184. For example, see Oil and Gas Journal, December 16, 1974, p. 26 and December 30, 1974, pp. 71-76.

TABLE 19

1973 OIL COMPANY RANKINGS ACCORDING TO:

Domestic Company	Sales	Assets	Net Income	Stockholders Equity	Forbes Profits	Net Income as Percent of Sales	Net Income as Percent of Stockholders Equity	Growth Rate of Earnings Per Share	Total Return to Investors
Exxon	2	1	1	1	2	45	66	258	74
Texaco	6	3	4	4	5	24	99	257	177
Mobil	7	7	6	7	7	103	141	167	235
Gulf Oil	10	9	8	8	9	44	157	260	130
Standard of California	11	10	7	6	8	31	149	255	137
Standard of Indiana	15	12	13	9	14	46	246	190	56
Shell Oil	18	16	16	16	18	123	325	357	45
Continental Oil	21	26	29	26	32	165	190	238	26
Arco	26	17	24	15	25	124	400	290	19
Occidental Petroleum	36	32	108	62	91	404	393	163	275
Phillips Petroleum	40	27	81	23	34	91	270	334	13
Union Oil	49	31	39	28	48	113	334	178	38

Source: Fortune, May 1974, pp. 232-235; Forbes, May 15, 1974, pp. 229-250.

The emphasis on punitive measures against the majors not only has no basis in fact, it is likely to be highly detrimental to the Nation. While the Congress and the Administration mete out punishment to the major oil companies, OPEC and the Arab producing nations can only chuckle.

ADDITIONAL STATEMENTS SUBMITTED FOR THE RECORD

STATEMENT OF STANDARD OIL COMPANY OF CALIFORNIA CONCERNING THE TESTIMONY OF MR. ANTHONY SAMPSON BEFORE THE SENATE SUBCOMMITTEE ON ANTITRUST AND MONOPOLY FEBRUARY 3, 1976

It is interesting that a Subcommittee of the United States Senate should look to a foreign journalist who by his own admission is neither an economist nor oil specialist to testify on the economics of oil. Indeed, his testimony exhibits a greater flair for fiction. Mr. Anthony Sampson's claim to any knowledge in regard to the issues on which he testified on February 3, 1976, before the Subcommittee on Antitrust and Monopoly of the Senate's Committee on the Judiciary apparently stems from various statements and comments which are attributed by him to certain Middle East oil personalities, hardly disinterested observers of the international oil scene. One must wonder whether Mr. Sampson has not been taken in by OPEC propaganda. What could be more natural than for OPEC representatives to point the finger of blame at some other conspicuous target.

We set forth below the <u>facts</u> in regard to the issues raised. In doing so, we concentrate on the basic thesis and ignore the peripheral areas raised by the testimony, including the subject of multinational corporations generally, bribes, the farsightedness (or lack thereof) of the Boards of Directors of oil companies, the needs, if any, for public directors on such boards, and the like. Although these may be interesting and important areas for debate, they do not constitute the main issue.

In its simplest form, the Sampson argument is as follows:

1. Problem - The number and size of oil companies having crude oil dealings with the major producing countries of Saudi Arabia, Iran and Kuwait allegedly led OPEC to organize in the first place and facilitate its continuance as an effective cartel.

2. Proposed Cure - Increase the number (and presumably the mix of sizes) of oil companies buying crude oil from those producing countries.

3. Claimed Results - Greater opportunities for independent oil companies, increased competition in buying crude oil from the major producing countries, less vulnerability for consuming nations to the OPEC cartel, and greater flexibility to the U.S. in its Middle East foreign policies.

This basic thesis is brought into sharper focus because even Mr. Sampson admits what so many others (even a few Presidential aspirants) have finally conceded -- that the companies did not sponsor or encourage the 1973 oil price rises in order to increase their profits and that no conspiracy existed or exists between the companies and OPEC. He also concedes that however one examines the situation, the U.S. will be increasingly dependent upon oil from the Middle East in the near and intermediate term, a fundamental and inescapable fact of life on which there is at last almost universal agreement. We shall have more to say about this later. Additionally, we strongly concur that it would be unacceptable over

the long term for consuming nations to allow themselves to be entirely dependent upon OPEC oil or its unilateral pricing policies and that some way must be found to accord consumers and third world nations a strong voice with the producers in pricing matters. This is one of the basic objectives of the International Energy Agency and of the Paris meetings among representatives of those groups. Finally, it is evident, as Mr. Sampson agrees, that nationalization would not provide a more efficient oil business and that the oil companies have been unfairly blamed for the faults of governments and consumers.

Unfortunately, the value of these positive conclusions is lost when one attempts to reconcile them with the "multiplicity of companies" idea. The central issue of world oil today is not the number and/or size of companies having crude dealings with major producing countries nor is it any other simplistic structural design; it is the simple fact that there is no near term or intermediate term substitute for OPEC oil. The plain fact is that today the great bulk of non-communist world's oil reserves happen to be in the OPEC countries, primarily in the large oilfields of the major oil producing nations of the Persian Gulf. No amount of realigning, restructuring or tinkering is going to change that fact. The reserves on which the free world must rely will still be where they are whether one company or 100 companies are set up to acquire crude oil from the countries owning them.

It is difficult to discern why more buyers of crude from OPEC countries would be advantageous to consuming nations. What is it about 100 buyers that would change the present situation to the benefit of

consumers? Can 100 new oil comapnies suddenly spring forth out of the earth with financing, ships, refineries, terminals, pipelines, bulk plants and service stations to move oil from these countries across the oceans of the world and turn them into essential products to fuel the industrial economies of the free societies? The notion, although somewhat obscure, seems to be that OPEC will find it easier to hold "hostage" a few large buyers. Because oil is important to these companies, it may force them to act as "agent" of the cartel in carrying the "prorationing" of production which OPEC has never been able to accomplish itself. Of course, the fact is that the oil is important to the consuming countries. These countries could not become indifferent to the availability of this oil if the major companies somehow vanished. Access to the oil is essential to economic survival and given the enormous increases in its price imposed by OPEC it is essential that it reach consumers in the most efficient and least expensive way.

The "production prorationing agent" hypothesis suggests a lack of understanding as to how OPEC operates its cartel. OPEC does not attempt to prorate production quantitatively either directly or through the companies. It has had no present need for production prorationing because it is able thus far to achieve its objectives quite satisfactorily from its standpoint through its coordination of unilaterally imposed prices and taxes.

Since the end of the 1973-1974 Arab production cutbacks, the OPEC governments have not collectively set production levels. There has been no "orchestration" of production rates by oil companies or anyone else. Production has just "dropped" -- not been "cut" -- and dropped by different

amounts in different countries, simply because consumer demand has been weak as a consequence of the worldwide recession, conservation efforts and the extraordinarily high oil prices. The practice of the major producing companies both now and throughout most of their history has been to provide capacity, and spare capacity too, to meet all the demands and requirements of a highly competitive market. Production rates are not established in advance -- they are only known after the fact. If another tanker had called for crude oil at any of the major Persian Gulf loading ports on December 31, 1975, it would have been loaded -- and this would have been true regardless of the ownership of the ship or the identity of the customer.

No, OPEC's tool today is not allocation of production; it is coordination of price and taxing policies. The fact that there may be a plentiful supply of crude oil does not put pressure on the government to reduce its prices and taxes as long as the government is content with the volume sold and its resulting total revenues. Thus, as long as the volume effects are considered to be tolerable by individual OPEC states, OPEC price/tax coordination is not susceptible to competitive erosion from surplus supply in the manner that business profits are.

Coordination of pricing and taxing policy has proven simpler for OPEC and less fraught with politics and emotion than coordination of production policy. This has been true notwithstanding the fact that OPEC's coordination of this policy has been less than perfect and to some extent unpredictable in its results. During the recent period, for example, changing freight and quality factors effectively caused situations where

some OPEC countries were receiving relatively less revenue per barrel and other countries were receiving relatively more, with the result that some countries (e.g. Iraq, Indonesia) approached full capacity production while others (e.g. Saudi Arabia, Libya) drifted down. This coordination mechanism works as long as there are enough "drifters down" willing to accept less production but more money.

To believe that the companies are in some way orchestrating production or regulating the market is to be gulled by OPEC propaganda. Few companies have significant operations in more than two or three OPEC countries -- and no company operates in all. Orchestration of production in all 13 OPEC countries, controlling over 80% of free world reserves, would thus be as miraculous as stopping the earth on its axis. The market in fact is dynamic and competitive, as demonstrated by the uneven production swings by the different producers and the fact that products are available in Europe at marginal cost, consisting of required payments to producing governments, spot freight and incremental refining and distribution costs.

The OPEC countries, acting in concert, are able through their price/tax coordination policy to control prices, and they are able to do so <u>alone</u>. They do not need the oil companies or anyone else to serve as their agents in this regard. Taxes and royalties have risen to the point that Mideast OPEC government "take" is about 95% of total revenues realized. The major companies are not favoring OPEC over the consuming countries. They are providing both some stability and diversity in supply and market as well as supplying technology, business management, and capital. They remain the indispensable bridge between oil in the ground, primarily in the Middle East, and the far-flung markets of the world. Additionally, they make

it possible for consuming countries to receive the benefit of OPEC price discrepancies which occur from time to time as a result of changing freight rates and product mix. An example of the latter has been the recent changing relative values of light and heavy crudes as fuel oil demand changed. The market draws crude preferentially from areas providing the most attractive economic package.

The consuming countries are dependent on OPEC oil today and for the immediate future. That is the basic problem and none other. Once one understands and accepts that, all of the current accusations, charges and countercharges involving the oil companies fall. Loyalty of the companies? Of course the American oil companies are loyal to the United States, as has been proven time and again -- but they also are compelled to obey the laws of the foreign countries in which they operate, just as our own government expects foreign firms operating in the United States to comply with American laws. Does anyone really suggest that American firms should obey only American laws in their worldwide operations? What of U.S. foreign policy? That policy is based on empirical and strategic considerations, one of which is the growing need of the United States for imported oil. Unfortunately, the oil exists there, not here; and our nation is doing too little to develop more here.

Would the Subcommittee really want to see Aramco replaced in Saudi Arabia by a consortium of Japanese and European oil companies? Or perhaps British ones?

In the end, although Mr. Sampson attempts to disavow it, his thesis is a frontal attack on the foreign policy of the United States. The United States has made agreements to assist Saudi Arabia and Iran in their major

plans for industrialization. The large oil companies are considered by both the United States and the producing countries as major national assets and instrumentalities for the fulfillment of these agreements. Now, Mr. Sampson proposes that they should be forbidden such a role. One can only guess at what ultimate purpose he has in mind.

We do not need further confusion in the energy debate -- it simply adds to the sterile name calling and fault finding which have paralyzed the adoption of any sensible national plan of action. We do need understanding, steadiness of mind, and courage to make the essential decision -- the decision to develop our own supplies at home of conventional and unconventional energy sources. Only such a large and sustained addition to our energy supplies will remove the United States from the grip of OPEC and reverse the rising and alarming growth in our dependence on outside sources.

KEWANEE INDUSTRIES, INC.

STATEMENT BEFORE THE
SENATE ANTITRUST AND MONOPOLY SUBCOMMITTEE

Chairman Bayh and Members of the Senate Antitrust and Monopoly Subcommittee of the Committee of the Judiciary:

I appreciate the opportunity extended to me to testify before this Committee. I am Johnie Ouzts, President of Kewanee Industries, Inc. and its wholly owned subsidiary, Kewanee Oil Company. I have been with Kewanee for fifteen years and approximately one-half of this time was in field operations. I have a Bachelor of Science Degree in Petroleum Engineering from the University of Tulsa.

The predecessor company of Kewanee Industries, Inc. was founded in the year 1871 soon after Colonel Drake's discovery in the northwestern part of Pennsylvania. In those early days the company owned and operated three small crude oil pipelines near Titusville and Oil City, however, these pipelines were sold to the Standard Oil interests as a result of their monopolizing activities in the year 1877. The company's first oil production was developed in 1879 in Pennsylvania. Operations expanded into the State of Illinois and in 1915, the company made its entry into the Mid-Continent area of the United States. Operations in this area have prospered and today represent the major portion of our oil and gas production.

Our first waterflood or secondary recovery project was commenced in 1942 and was successfully completed in 1944. This was the start of an important operational phase of the company, and was the beginning of an era of joint operations with independent and major oil companies in numerous secondary recovery projects.

With the advent of the secondary recovery of oil, consolidation of contiguous producing properties of divergent ownership into "units" became important. These unitized operations were dictated by the desire to achieve more efficiently engineered projects with an attendant increase in recoveries as well as monetary savings. Unitization agreements include both the working interests and the royalty interests for the individual leases. Individual equities (unit participation factors) are usually negotiated within an engineering committee. Once the lease participation factors become acceptable to a major percentage of those concerned, the unit usually becomes effective, however, this varies according to individual state laws. In most cases the company owning the largest working interest in the unitized area is designated as the unit operator. The operator has the authority to conduct the operation of the unit in compliance with an operating agreement and is responsible to the operating committee. This committee consists of working interest owners in the unitized area and each has a vote in accordance with its interest in the unit.

In the past, the company has been an aggressive buyer of producing oil and gas properties particularly those with secondary recovery potentials. The purchase of producing oil properties, especially those in the latter stages

of the primary producing life, and the initiation of secondary recovery processes has been the prime basis for the company's existence and growth in the oil and gas business. However, during the more recent years the purchase of producing oil and gas properties has become exceedingly competitive due to wider application of technology and increased finding costs for reserve replacement.

The company has interests in approximately seventy different units that have been formed for secondary recovery projects with unit participation varying from less than one percent to 98.5 percent. Kewanee operates twenty-three of these units. In addition, the company has varying interests in about 250 joint interest leases of which we operate seventy-two. Partners again include both independent and major oil companies. These jointly owned leases were usually created by combining undeveloped acreage for the drilling of an exploratory well.

In 1965, the company participated as a member of a group created to conduct geological and geophysical studies in the Gulf of Mexico. The data obtained would be used to evaluate acreage at subsequent federal sales. The company had a ten percent interest in this joint venture arrangement. The group was formed as a risk sharing vehicle because of the large amounts of money that could be involved in bonus bidding and development. The group operator served as chairman and operations were controlled by majority vote similar to unit operations previously described.

The company's initial purchase in the Gulf was at the June 13, 1967 Federal Offshore Louisiana sale. The group was the successful bidder on seven 5,000-acre blocks with Kewanee's interest varying from 10 percent to 15.5 percent. Our portion of the total bonus cost was $7,652,000. It is significant to

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note that this bonus outlay was slightly in excess of the company's net earnings of $7,368,000 for the year 1967. As of August 31, 1975 an additional $15,454,000 has been expended as Kewanee's share to develop these blocks. Placid Oil Company is the operator. Five of the seven blocks acquired have been proven to be productive. The crude oil is sold to Ashland Oil and Refining Company. Gas is sold from four blocks to Michigan-Wisconsin Pipeline Company and to Trunkline Gas Company from the remaining block.

The company's second investment in the offshore Louisiana area was at the December 15, 1970 Federal sale. A total of seven blocks were acquired and the company's interest varied from 6.3 percent to 10.0 percent. Kewanee's portion of the bonus cost was $9,045,000. It is again significant to note that the company's net earnings for the year of 1970 were $10,258,000. As of August 31, 1975, an additional $10,118,000 has been spent to develop these blocks. Four of the blocks have been proven productive with operations divided by Placid Oil Company and TransOcean Oil Company. Crude oil is sold to Shell Oil Company from three of the blocks and Scurlock Oil Company from the remaining block. Gas from all four is sold to Michigan-Wisconsin Pipeline Company in accordance with an advance payment agreement.

Kewanee's third purchase in the Gulf of Mexico was at the December 19, 1972 Federal Offshore Louisiana sale. The group in which the company participated acquired one 5,000 acre block. The company has a ten percent interest in this block and its portion of the bonus cost amounted to $8,652,000. Net earnings during the year 1972 for the company were $12,695,000. An

additional $1,437,000 has been spent as of August 31, 1975 on this lease which is in the early stage of development. Ashland Oil Company is the lease operator. Oil is presently being sold to Placid Refining Company and the gas will be sold to Trunkline Gas Company on completion of a gas pipeline.

The fourth involvement in the Gulf of Mexico was at the Federal Offshore Texas sale that was held on June 19, 1973. Two 5,760 acre tracts were purchased and the company's interest was 4.3 percent and 12.5 percent. Our part of the bonus costs was $1,906,000. A dry hole has been drilled on each tract at a cost to the company of $121,000.

Kewanee participated in a group that submitted bids on six blocks at a Federal sale involving acreage located offshore from the States of Mississippi, Alabama and Florida. This sale was conducted on December 20, 1973, however none of the bids were accepted.

The fifth and most recent acquisition in the Gulf of Mexico was at the October 16, 1974 Federal Offshore Louisiana sale. One 5,000 acre block was purchased and the company's part of the bonus cost was $2,585,000. The company has an 11.2 percent interest in the block which is operated by Placid Oil Company. Two wells have been drilled to date without establishing commercial production.

Both the individual partners and their respective interests vary in the leases located in the Gulf of Mexico. A list of these partners is as follows:

Ashland Oil Inc.

Bass Enterprises Production Company

Canadian Superior Oil (U.S.) Ltd.

General Crude Oil Company

Hamilton Brothers Oil Company

Hamilton Brothers Petroleum Corporation

Hassie Hunt, Inc.

Highland Oil Company

Highland Resources, Inc.

Hunt Oil Company

Hunt Petroleum Corporation

J. Ray McDermott & Co., Inc.

Koch Industries, Inc.

LVO Corporation

Metals Service Company

Offshore Operators, Inc.

Placid Oil Company

TransOcean Oil, Inc.

The Superior Oil Company

Unidel Oil Corporation

Union Carbide Petroleum Corporation

The company's only other venture in the outer continental shelf area of the United States was at the February 6, 1968 Federal Offshore California sale. Two tracts of 5,760 acres each located offshore from Santa Barbara were purchased. Kewanee had a ten percent interest in each tract and our portion of the bonus cost amounted to $7,385,000. It is again significant to note the bonus exceeded our company's net earnings in 1968 which were $6,297,000. Pauley Petroleum, Inc. was the group operator. The other partners were:

Ashland Oil and Refining Company

Colorado Oil and Gas Corporation

Forest Oil Corporation

J. M. Huber Corporation

Husky Oil Company

Midwest Oil Corporation

J. Ray McDermott & Company

Eight wells were drilled on these two tracts without establishing oil or gas production. The cost of these dry holes to the company was $376,000. These leases were a part of the controversy surrounding drilling safeguards resulting in many delays and have expired by their own terms.

A summarization of the company's activity in the Outer Continental Shelf Area of the United States shows acreage was acquired at six different Federal sales. The total bonus cost to the company was $37,225,000 and in excess of $27,506,000 has been spent in developing this acreage. It is both interesting and significant to note that the company's total net earnings for the years 1967 through 1974 were $105,797,000. During this seven year period in which the company participated in six sales, a total of $64,731,000 or 61 percent of these earnings were spent in acquiring and developing offshore leases. Cumulative sales from the offshore leases amounted to 6,655,000 barrels of oil and 35,555 MMCF of gas as of January 1, 1975. At this same time, the offshore reserves were estimated to be 8,700,000 barrels of oil and 89,672 MMCF of gas. Consequently, the cost to the company to develop a barrel of crude oil, including

gas equivalent, in the Outer Continental Shelf Area of the United States is in excess of $3.00 a barrel. It should be noted that this value does not include operating costs or administrative costs. About 60 percent of the oil is presently being sold for a maximum of $5.25 per barrel and a maximum price of $0.52 per MCF is being received for our natural gas. Both of these product prices are set by existing statutes.

The amount of the bonus bids for Federal offshore leases has been constantly increasing and are presently prohibitive for independent operators such as Kewanee. Although the company has acquired acreage at six separate sales, it appears at this time that only the initial two acquisitions in the Gulf will ultimately be profitable. The company has reason to believe these large bonus requirements will continue and will probably extend to the shelf area off the eastern coast of the United States even though it is completely untested. It is hoped the industry will begin submitting more realistic bonus bids rather than the huge bids that have been predominate in the more recent sales. It is further hoped the government will initiate some type of work commitment arrangement as an alternative to the cash bonus system. The foreseeable outlook for the independent operator in the outer continental shelf area of the United States must be considered very discouraging.

The Committee has stated that it is interested in determining the relationship between the crude producer and operators of gathering systems and pipelines. It has been my observation in the sales by Kewanee that the relationship is purely a buyer-seller relationship to the extent that Kewanee has been permitted by law to sell its oil to the purchaser paying the highest price. Our relationship

with oil purchasers is an arms-lengths one as our only interest in refining consists of a small asphalt refinery located in Tacoma, Washington.

Our crude oil is sold to a total of 52 different purchasers. Gas is sold to 96 different purchasers. It can be readily demonstrated that the company's products are sold to many buyers, both large and small, and there are no predominate purchasers of either the crude oil or natural gas. After the oil enters a pipeline, the company has no control or interest as to its ultimate destination. We have control of the sale of crude from wholly owned or operated properties as well as rights to take in kind from other operations. In the past, there has usually been only one posted price for a field and in many instances there has been only one pipeline outlet available. Only in recent months have independents had bargaining power in the price of new or released oil.

Effective December 19, 1973, the price of old oil was fixed at a maximum of $5.25 per barrel. A buyer-seller relationship is fixed by law which gives virtually no negotiating power as to who purchases the oil of this classification. The price of oil classified as new, released or stripper presently has a maximum posting of $13.55 per barrel and increases almost weekly. This increased value for crude oil has had a positive impact upon the company's planned operations and will continue to do so if the price continues. The company has either initiated or is contemplating programs to develop oil reserves that were previously uneconomical. Predominate among these are "infill" and "step-out" drilling, remedial workovers, waterflooding in marginal areas, polymer flooding and steam injection into low gravity or heavy oil fields. A continuation of higher prices will cause the company to re-evaluate exploratory prospects that would previously have been uneconomical and could also renew interest in the outer continental shelf area.

The amount of oil and gas reserves that can be developed by such a program is one of considerable conjecture. Kewanee published its reserves in filings with the Securities and Exchange Commission as of January 1, 1972 and again as of January 1, 1975. During this three year period, the oil reserves decreased 10,900,000 barrels or 15.1 percent and the gas reserves decreased 32,300 MMCF or 14.6 percent. Kewanee was not able to replace the volumes of oil and gas sold during this three year period under the economic conditions in which our industry has been forced to operate. If these conditions continue, the company is being literally forced to produce itself into non-existence.

As of January 1, 1975, the company's net reserves were 61,200,000 barrels of oil which volume is equivalent to 8.7 years at our present rate of production. The net gas reserves were estimated to be 189,000 MMCF which is equivalent to 7.4 years at the current rate of production. Both of these ratios are low and are of considerable concern to the company.

The company's interest in pipelines used for the transportation of crude oil consists of three minor operations. The first is the Rico Pipeline, a 4.4 mile four-inch diameter crude oil pipeline, in Rice County, Kansas. This line connects a company operated unit to a Phillips Petroleum Company station.

The second involvement concerns the Paloma Pipe Line Company in which the company has an 11.2 percent stock interest. This company, in turn, has a one-third interest in the Whitecap Pipe Line System which consists of 45 miles of an 18 inch diameter pipeline located offshore from Louisiana. The Paloma Pipe Line Company also owns a 17.5 percent interest in the Ship Shoal Pipe Line System. The first part of this system consists of 38 miles of 16 inch

diameter and 32 miles of 22 inch diameter pipelines all of which are in the waters off the coast of Louisiana. The second part of the Ship Shoal System is composed of 28 miles of a 20 inch diameter pipeline which has an onshore terminal at St. James, Louisiana.

The remaining interest is in the Bonito Pipe Line System which is located entirely in the waters offshore from Louisiana and consists of 63 miles of 14 inch diameter pipe. The company has a 1.28 percent interest in this joint venture operation.

Equity in both the Paloma and Bonito pipelines was brought about by the necessity to move group oil production onshore to existing pipeline systems.

According to various publications there have been some differences of opinion regarding MER's for offshore wells located in the Gulf of Mexico. It seems appropriate that this statement should include some reference to this situation.

MER or Maximum Efficient Rate is the maximum daily volume of oil and/or gas that can be withdrawn from a reservoir over a sustained period of time and not have a detrimental effect upon the ultimate recovery. The daily volume so determined is purposefully designed to make it a maximum value so as not to restrict production. This is evidenced in that the final MER assigned includes an additional ten percent of the rate requested. Also, it should be noted that the MER is a daily rate and oil or gas wells, especially the more complex miltiple completed wells generally do not produce throughout a year without interruptions. These interruptions are caused by wells being off of production due predominately to such things as well bore problems, mechanical difficulties, pipeline

difficulties, weather and the availability of equipment or personnel. It should be realized the MER is a conservation regulation and was not intended to establish actual daily rates of oil or gas production. Therefore, any attempt to correlate annual production to an annualized MER could be not only meaningless, but quite misleading.

I hope this statement will be helpful to the Committee. Again, I appreciate the opportunity to testify before this Committee and I thank you for your attention.

WRITTEN STATEMENT
of
W. W. Gresham, Jr.
Secretary-Treasurer & General Manager
Gresham Petroleum Company
Indianola, Mississippi

for
THE SENATE ANTITRUST AND MONOPOLY
SUBCOMMITTEE ON THE SUBJECT OF
DIVORCEMENT-DIVESTITURE OF THE OIL INDUSTRY

Thank you for agreeing to accept my comments regarding divorcement-divestiture legislation now being deliberated by the Antitrust and Monopoly Subcommittee. I am very concerned over this legislative effort to break up the large companies in the oil industry because I firmly believe such action attacks one of the founding principles of the free marketplace and our world-envied free economy. I also believe this attempt to divide the oil industry represents a serious threat to every American and every American business, a threat which could ultimately reach the lowest level of the economy and a threat that could represent the beginning of a move away from our basic freedoms.

My family has been in the oil business for fifty years, and we know the positive effects of the oil companies on the consuming public. We are located in the Mississippi Delta and our business services about 600 farm accounts, several service stations, and many country stores with LP gas, gasoline, and diesel fuel. Our customers depend on our business to supply their needs and service their demands. Our business has prospered and every one of our customers have benefitted from the innovative technology, technical expertise, and management skills of the major oil companies. We've seen better products, improved service, new skills, and above all, plenty of quality products to meet the demands of our customers. Also let me remind you that the technology of the oil industry in fertilizer and other petrochemicals has been a prime factor in achieving abundant food for our nation and the world at prices envied throughout the world.

As an independent businessman in the oil industry I cannot see how this legislation will increase supply, provide more competition, lower the costs of operations, improve intra-industry relationships, guarantee better conditions for any market segment, increase incentives, decrease consumer prices, or help satisfy consumer demands. In fact, I believe the legislation will have just the opposite effect on my business and all other small, independent businessmen. I also believe that once we begin to disrupt a proven system, it is only a matter of time before we will see more government intervention. Once our industry fails to respond because of this interference the next step could be total

nationalization which could well signal the death knoll of our way of economic life and the real loser will be the very people you seek to protect ... the consuming public. We could well ask then, who will be next?

In the areas our company serves, we are the oil industry, and I cannot believe that dividing an industry into small segments would accomplish anything. In fact, I firmly believe this legislation could ultimately cause our industry to lose its ability to respond simply because it will take away a management tool which is basic to all business large or small ... the freedom to use resources and skills in the most efficient combination which will satisfy the needs of the public at the most reasonable cost while providing reasonable returns for those who accept the inherent risks. We apply this management principle in our own business and it allows us to satisfy our customers through more efficient operations and at a better overall cost. There is nothing wrong with integrating any business regardless of size into the most effective economic units.

I cannot believe that legislation of this type is well conceived, nor can I understand the real intent of those supporting such actions. How can anyone defend an effort to dismantle the oil industry at a time when we should be clearing the path to allow it to work toward solving our national energy problems? I do not believe that breaking cost effective units into multiple parts would do anything other than make us more dependent on foreign oil. We have not seen one word from the subcommittee which would indicate that division will increase domestic oil and gas production or provide a solution to our present dilemma.

We feel it would be better for those drafting legislation of this type to consider the good of the consuming public and the good of the thousands of independent businessmen who will suffer by continued government intervention and who may not be able to respond to the consumers needs if divorcement is enacted. We believe you should concentrate your efforts on developing a policy which will encourage the private sector to marshall its forces to solve this critical problem rather than destroying an industry that has historically proven its ability to respond ... an industry whose technology is admired and in demand the world over by every nation except, apparently, our own.

I appreciate this opportunity to be heard.

TESTIMONY
SUBMITTED BY THE
MISSISSIPPI PETROLEUM MARKETERS ASSOCIATION
TO THE
SENATE ANTITRUST & MONOPOLY SUBCOMMITTEE
ON
PETROLEUM INDUSTRY DIVESTITURE

The Mississippi Petroleum Marketers Association (MPMA) appreciates this opportunity to be heard by the Senate Subcommittee on Antitrust and Monopoly on the subject of divorcement-divestiture of the oil industry. Our 20-year old Association consists of over 180 independent petroleum jobbers, distributors and consignees whose operations reach into practically every town and county within this state.

We are independent businessmen who have invested in grass roots America. Our operations provide jobs for many Mississippians as we seek to supply the demands of the consumer. Our payroll dollars, our tax dollars, our expense dollars, our investment dollars, our profit dollars all have a favorable and sizeable impact on Mississippi's economy through the day-to-day turnover of these monies. Our tax dollars, whether direct or indirect, support local, state and national governments.

We also supply a large portion of the motor fuel used in Mississippi through our members, and being independent businessmen, we feel that we are very close to the people of

this great state. We believe we can speak with some authority about the impact of the legislation you are considering upon the consumer, upon the economy of our state, upon our businesses, and upon our nation.

We are free enterprise oriented and we believe the future of our country depends on the inherent freedom of our business society to use its innovativeness to combine management expertise, technology, factors of production, resources and capital in the most efficient manner to fulfill the demands of the American public for the least cost while at the same time realizing an equitable profit as a reward for the risks involved.

As independent marketers representing both branded and unbranded segments of the market we are all very concerned over the effects of such legislation directly on our business. We do not believe that breaking up the oil companies will have any positive effect on energy supply, on satisfying consumer demands, on protecting any segment of the market, on bettering our position, or on making it easier to operate. We are already inundated with government assistance during this crisis. Since 1973 the regulations from one agency alone make it nearly impossible for us to operate and these very regulations were developed to protect us. We believe the method of operation of the oil industry through its integrated operations has been in the best interest of the public, and

we believe that disrupting operations would do nothing more than seriously impact the thousands of independent small businessmen in the industry in addition to making it much more difficult for us to continue to furnish the needs of the customer. And at our level, we are the oil industry to those we serve.

The legislation pending on divorcement could affect us in many, many areas which have seemingly been overlooked. You must remember that once an action like this is taken and the industry is divided, there is no way that the puzzle can be pieced back together. We are concerned about these broad areas of impact: (1) the disruption in the existing distribution system which has historically supplied our needs and therefore the consumer's needs; (2) the ability of multiple units to furnish the supplies on demand; (3) the technicalities of purchasing credit, contracts and quantity; (4) getting the supply to our terminals; (5) the loss of research and development which continually supplies the public with better products and us with better methods of service; (6) the loss of brand identity; (7) loss of advertising and promotion assistance; (8) the loss of training; (9) the loss of financial and management assistance; (10) the ability to continuously raise capital if the confidence in the industry is lost to those in the financial world.

We also question the substitution of multiple business segments, middlemen and all the rest for the efficient units we have now because we believe it will cost more to operate in a divided marketplace, and we believe ultimately the industry will not be able to fulfill the consumer's desires. We also believe this will be a definite step toward placing our country on the path toward further shortages. We believe steps of this type which disrupt the system can only result in further dependence on foreign powers.

We believe in the proven validity of the decision making process inherent in a free marketplace. Well managed businesses will prosper when they meet the tests of the marketplace, and if they do not they will fail. Size is irrelevant. The free enterprise system is not perfect but its record of accomplishment is unquestionable.

We are concerned that the pending legislation could disrupt an industry that serves the best interest of our people and our country. The petroleum industry has historically given us an energy-plentiful society at a reasonable cost. Even today in light of the energy crisis and the over abundance of government interference, the system still works to give us one of the lowest energy unit costs in the world.

It does not make economic sense to consider that breaking apart the oil industry could serve the public interest. We

believe this legislation overlooks the interests of those you serve ... the American people. We urge you to consider the effects of such action on all the elements of the petroleum industry of which we are a vital part.

Because of the issues involved, we urge the subcommittee to deliberate this matter carefully. Will the public interest be best served by disrupting a basic management philosophy upon which much of our business-industry-services sectors are based? We believe businessmen should be free to choose the combination of resources and the elements of production which will satisfy the demands of the customer at the least cost possible. Disregard for economies of scale whether in large or small operations is hazardous at best and in the case of the complex, capital intensive, high risk oil industry, it could be disastrous.

We are also concerned about the welfare of millions of direct shareholders, and the millions of people who have invested indirectly in these companies through mutual funds, insurance policies, pension plans, etc.

The oil industry is highly competitive and meets every criteria stated in law. In no instance to our knowledge has it been proven that these companies constitute a monopoly or restrict competition by any theoretical or legal definition. There is an ample body of federal law and an abundance of common law to prevent abuses to the system or abuses to smaller units.

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We believe that divorcement legislation will be only the first step in a continuing series of moves leading this entire industry away from the economics of the free market and toward additional government control which will ultimately reach to the lowest level of business and the smallest element of production. In this regard all those whom you seek to protect with this move will someday be affected either directly or indirectly.

The impact on our economy in jobs and the impact on our nation in terms of solving our critical energy problems will be harmful. Whenever you divide anything into smaller units it requires more of every element to furnish the basic product. Spreading technology thinner, requiring additional management which dictates additional overhead, disrupting a supply system which has historically operated in the best interest of the customers, eliminating needed funds for research and development on a massive basis and removing or at least limiting the ability to provide capital formation can only be considered harmful to energy development. Even though we are small, we apply these same principles of management within our business.

Just for a moment consider the added costs of breaking up these companies into multiple units which would have to adhere to the multitude of government regulations such as EPA, OSHA, EEOC, FEA, FTC, FPC, etc. and etc. All of these

agencies purportedly were designed to serve the consumer's best interest but add dollars to the consumer's cost in the name of protection or regulation. The technology of our oil industry is in demand the world over. Its ability to produce is admired everywhere. It is important that in our own country we encourage this vital segment of society which benefits everyone.

We earnestly solicit your consideration of our concerns, and we urge you not to close this subject without full and indepth hearings from all segments of our society regarding the ultimate impact on every American. We believe in the American system, and we believe in the right of individuals to combine resources and experiences to fulfill the desire of customers and the needs of the public. The MPMA Board of Directors has passed the attached resolution to further substantiate their concern over the divorcement legislation.

We urge you to preserve the marketing structure of the oil industry. We ask you to concentrate on those measures which are in the best interest of the people without regard for partisan politics. We ask you to take a stand that will help us to become less dependent on foreign powers that will keep our nation strong, and will supply the needs of the consuming public.

Thank you for giving us this opportunity to respond.

RESOLUTION

WHEREAS various bills to regulate the petroleum industry would prohibit any oil company from doing business in more than one field of operations (production, refining, transportation, or marketing); and

WHEREAS such basic restructuring of the oil industry might lead to economic chaos throughout the industry, with resulting damage to the national economy, and ultimately to demands for the nationalization of the oil industry; and

WHEREAS a division of functions would probably result in higher prices to the consumer and place in jeopardy the very existence of all but the largest and strongest independent wholesalers,

NOW THEREFORE BE IT RESOLVED that the Mississippi Petroleum Marketers Association go on record as opposing divestiture and/or divorcement of the oil industry and to maintain this position until such time as it can be clearly shown that such steps will benefit (1) the consumer, (2) the wholesaler, (3) the retailer, and until it is shown without question that such action would not lead to further regulatory restrictions which would increase our nation's dependence on foreign oil imports.

BE IT FURTHER RESOLVED that copies of this resolution be mailed to members of the Mississippi Congressional delegation, officials of major oil companies marketing products in Mississippi, the news media and other interested persons.

AMERICAN ACCESSORIES, INC.

P. O. BOX 908 • BECKLEY, WEST VIRGINIA 25801 • PHONE 304 253-9592

Thank you, Mr. Chairman. I am Harry W. Gilbert, and I am a jobber from Beckley, W. Va., the southern part of the state and cover the five surrounding counties. I would like to say a few words about the functions of a jobber in general and a little about my own operation.

Jobbing is the oil industry's way of decentralizing the marketing of its products. Basically, no major oil company could devote the capital and the manpower to the job of keeping up with the growth of the market in many areas of the country at once. For example, when a new road is approved by the state, it is the local jobber who hears of it and who is the first one to start speculating about where the best locations for future filling stations will be. It is the local jobber who buys the land and sets up the station.

Many people who are buying a major brand of gasoline are under the impression that the company runs that service station itself. In fact, jobbers like myself are taking over an expanding share of the marketing operations of the larger companies. We are independent businessmen even though we sell the name-brand products of nationally known companies. Our only connection with the national companies is the fact that we buy our products from them. We own and operate our own bulk plants and our own service stations and equipment.

In my own company, I operate a 65,000 gallon bulk plant, own pump and tank equipment at stations and delivery trucks, and I own and/or serve a total of 35 retail outlets which range from full service filling stations down to smaller retail outlets tied into grocery stores.

My principal concern with the present rash of oil divestiture bills is the fact that very little of the newspaper and television publicity is much concerned with the role of the small businessman or the small town in the overall oil picture. The concerns they express in their stories don't resemble those in my area and the kind of business that I operate there. Consequently, I always have the feeling that whoever is attacking the oil industry thinks that the whole country is a single high volume urban market in which there will always be a lot of cut-rate stations around ready to take over if the big oil companies are legislated out of the market. This type of thinking doesn't reflect that many people live in the rural parts of the country where there is not the high volume demand. The work that full scale service stations do in the country where there is no convenient access to auto dealers is of vital importance to rural America. Tearing down the filling stations nationally will gravely hurt my ability to serve my customers the way I have done for the past 20 years.

I am not in favor of divestiture for any area. I think tearing down the marketing wing of the large companies will hurt retail customers no matter where they live, but I am certain that it will have a grave impact on the rural markets where we serve many small commercial accounts and small businesses as well and towns people. From what I can see of these bills, they would make it impossible for me to have the same assured supplies of gasoline for our customers that we now have. They would make my supplier less reliable and force me into supply relationships with several wholesale suppliers where I now have to deal with only one.

If I had to deal with more than one supplier who had my interest at heart, my costs would go up. I would have to pass those cost increases on to my customers. On top of that, each of the suppliers that I dealt with would have to have separate departments for legal work and for accounting and bookkeeping and for management. I would have to be contributing towards the cost of several overheads of several suppliers. Ultimately, these costs would all come from my customers who would not be getting any of the benefits these bills supposedly promise. These bills might not be so hard on the heavily populated cities, but they would be disasterous on the rural and small town populations.

In my business, I have lately been affected by the high costs of a number of these government measures that have been taken without regard to their effects on the small business man. Two examples of the ways in which such agencies run the petroleum business will show what I mean. First, the EPA will be requiring vapor recovery equipment on all service stations in the next few years. At a cost of about $10,000 per station, these will add about $350,000 plus yearly maintenance to the costs of doing business.

A second example of the kinds of things that these bills end up doing to the small businessman is this: even though we sell only about 300,000 gallons of kerosene and fuel oil per year, under the EPA oil spill prevention plan, we had to relocate storage tanks and build a dike at the cost of over $15,000. At 1.5¢ net profit per gallon, that will take our entire profit on kerosene and fuel oil sales for the next 3 1/2 years to pay off. These are just two changes demanded by government agencies. There is no guarantee that there won't be two more tomorrow.

Sometime ago, I attended some hearings on the original allocation program. At that time I remember a number of congressmen questioned the wisdon of past laws and the powers that were given the EPA to regulate all businesses. The fact that so many congressmen felt that mistakes were made before makes me want to ask you to be especially careful before you do something that could wipe out the small-twon and rural petroleum wholesale and retail market as we know it today.

I think anybody who votes for any of the present bills out to be able to answer the questions that occur to me and to my customers in Beckley and the surrounding counties:

1) What would be the incentive of a number of smaller oil companies to continue to supply me and my fellow jobbers in small cummunities?

2) Would I lose the brand identification that my business has been built on for the last 20 years?

3) Would I be able to accept and use nationally recognized credit cards? The convenience of credit cards has been a real lifesaver over the years of my competition with other brands. Losing them would mean the loss of a large part of my relationship with many of my customers.

4) Would the companies that replace my current supplier be able to expend me the kind of credit that Amoco has? For the small town dealers and jobbers this is a point as it allows me to extend credit to my customers.

5) Would a new company have new marketing methods that would require large expenditures that I would not have to make under my present arrangements?

6) Could I depend on the same smooth service from smaller companies that I have always gotten from a large company like Amoco?

This concludes my remarks, and I would be happy to answer any questions you or your staff may have.

Harry W. Gilbert
Jobber, Beckley, West Virginia

STATEMENT OF EDWARD B. CROSLAND, AMERICAN TELEPHONE AND TELEGRAPH CO.

My name is Edward B. Crosland. I am Senior Vice President of American Telephone and Telegraph Company and a director of the Chesapeake and Potomac Telephone Company of Virginia and the South Central Bell Telephone Company. I have been employed by the Bell System for 29 years with responsibilities primarily for legal and regulatory matters and communications service to the government.

This statement is largely confined to the effect the bill, S.2028, would have, if enacted, upon the authority and duties of the Federal Communications Commission under Title II of the Communications Act of 1934, as amended.

S.2028 is a somewhat sweeping measure which would apparently apply a single broad and general standard to widely different industries and markets functioning under varying economic and legal circumstances. By necessary implication, the bill would amend, if not essentially repeal, a number of statutes in at least two fundamental respects. First, it would change the substantive criteria for regulatory action that have been established by Congress over the past 90 years, criteria established in each case after careful study of the industry or problem in question.* And second, it would change existing procedures and rules as to the burdens of proof in administrative proceedings, and substitute

* The policy provisions of Section 2(b) state that it would "establish procedures that strengthen and facilitate the application of anti-trust and pro-competitive policies by Federal departments and agencies . . . minimize anti-competitive behavior in regulated industries . . . [and] encourage more vigorous and far-reaching application of the antitrust laws in the policies and practices of Federal departments and agencies. . . ."

a difficult method of judicial involvement in agency actions - de novo proceedings in the federal courts rather than appellate review which could prove to be time consuming and possibly unworkable.*

It appears that the basic purpose of S.2028 is to alter the balance between regulation and competition in all industries regulated by Federal agencies which were established under special regulatory statutes such as the Interstate Commerce Act, the Federal Aviation Act, the Communications Act of 1934, The Securities Act, among others. Presumptively at least, the bill would substitute a one-dimensional competition standard for the multifaceted public interest standards under which these industries are now regulated. Moreover, Section 3(a) of the bill would authorize, and indeed encourage, antitrust suits against such regulated industries even where their conduct is pervasively regulated by administrative agencies.**

Under Section 3(a), no Federal agency could take any action, except for certain matters (other than rulemaking), "the

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* Section 3(c)(5) provides that "[I]n actions brought under this subsection the court shall determine the matter de novo and the burden of proof shall be on the agency or other proponent of the agency action. . . ."

** Thus, the bill would also reverse a number of Supreme Court decisions which draw a line between the respective jurisdiction of regulatory agencies and antitrust courts, holding that matters growing out of and subject to comprehensive and pervasive regulatory schemes are beyond the scope of the antitrust laws. Pan American World Airways, Inc. v. U.S., 371 U.S. 296 (1963); Hughes Tool Co. v. Trans World Airlines, Inc., 409 U.S. 363 (1973); Gordon v. New York Stock Exchange, Inc., 422 U.S. 659 (1975); United States v. National Association of Securities Dealers, Inc., 422 U.S. 694 (1975).

result or effect of which may tend to create or maintain a situation inconsistent with the <u>policies</u> or <u>provisions</u> of the antitrust laws unless it finds that--

(1) the agency action is necessary to accomplish the fundamental and overriding statutory purpose;

(2) the <u>anticompetitive</u> effects are clearly outweighed in the public interest by significant and demonstrable benefits to the general public; and

(3) the objectives of the agency action and the fundamental and overriding statutory purpose cannot be accomplished in substantial part by alternative means having lesser anticompetitive effects." (Emphasis added.)

The bill does not define the term "anticompetitive effects," or distinguish it from what is intended in the phrase "situation inconsistent with the policies or provisions of the antitrust laws"; nor does it explain the difference between the "policies" and the "provisions" of the antitrust laws. These undefined terms would necessarily give rise to special difficulties, because every industry regulated by a Federal agency is necessarily in "a situation inconsistent with the policies and provisions of the antitrust laws." In nonregulated industries, restraints on entry, pricing and certain consolidations and mergers are generally condemned by courts as violations of the Sherman Act. In contrast, such restraints have been considered by Congress to be essential to protect the public interest in regulated industries. For example, under the Communications Act the FCC is authorized among other things to suspend and prescribe rates; to require a carrier in the public interest to provide or abandon certain facilities or services; to attach conditions in the public interest to

grants of authority; to approve in the public interest the consolidation of telephone company properties; and to authorize in the public interest the consolidation or merger of domestic telegraph carriers. Such provisions are indeed inconsistent with the antitrust laws, but they are considered necessary by Congress to carry out the public interest and achieve lower prices, greater quality and availability of service and more efficient utilization of national resources under existing regulatory statutes.

S.2028 provides a number of procedural devices intended to reinforce the drastic changes it would accomplish in the substantive provisions of existing regulatory statutes: routine intervention by the Department of Justice and the Federal Trade Commission; mandatory public hearing after notice; and the establishment of a right in "any person, including the Attorney General" to enforce the statute by bringing a civil action against an agency. In such actions the courts are to determine the matter de novo; the burden of proof is on the agency or other proponent of the agency action to justify its findings under Section 3(a); and provision is made for the award of "reasonable attorneys' fees to any private complainant who substantially prevails."*

Obviously, S.2028 would radically alter the manner and standards by which the telecommunications industry and numerous other

* For the telecommunications industry Sections 3(c) and (d) of S.2028 appear to duplicate or parallel several of the provisions of the Communications Act.

industries now are regulated. We suggest that such changes should be undertaken, if at all, only after an intensive, in-depth review of current regulatory policies and practices. Such an industry review is necessary to determine whether changes of the kind proposed by S.2028 would result in improvements to each industry. In this regard, we agree with the statement made by Assistant Attorney General Thomas E. Kauper in his testimony of December 10 before your Subcommittee that "a rational and well-ordered national commitment to competition in the heretofore regulated industries" requires "an in-depth review of the need for regulation of any particular industry and of the proper delineation of the regulatory authority of our independent agencies." (p. 4) This task must be done, as Mr. Kauper says, "industry-by-industry or agency-by-agency." (p. 5)

Mr. Kauper also asserted, however, that S.2028 should be enacted prior to such a review.

We respectfully disagree with this recommendation. We believe that consideration of legislation which would be a "national commitment to competition in the heretofore regulated industries" must be preceded by an in-depth review of the type described by Mr. Kauper. As discussed hereinafter, the Communications Act was enacted following just such a congressional review. The results of those congressional deliberations for the telecommunications industry should not be dismissed lightly. If there is a basis for regulation of the telecommunications industry, and Congress has determined that there is, we suggest that it is questionable to impose another and inconsistent set of standards

upon the existing regulatory scheme. By ignoring these obvious conflicts, S.2028 would, if enacted, frustrate the goals both of regulation and of the antitrust laws. Accordingly, we strongly urge that no action be taken with respect to S.2028 before Congress has considered the need for continued regulation of the telecommunications industry and the necessary and proper standards to govern such regulation.

The telecommunications industry already has urged the Congress to review and reaffirm the basic principles of Title II of the Communications Act and to delineate more clearly the public interest standard which governs the FCC's authority with respect to a number of novel recent problems in the telecommunications industry. It is hoped that the Congress will undertake precisely the action recommended by Mr. Kauper, namely, the proper delineation of the regulatory authority of the FCC under contemporary and foreseeable circumstances.

In his testimony before this Subcommittee, Mr. Kauper spoke as if a commitment to the ideal of free competition were the _only_ principle of American social and economic policy. Mr. Kenneth Cox, in his testimony before this Subcommittee on behalf of MCI Communications Corporation, made a similar assumption and appeared to suggest that the FCC adopt competition for competition's sake.* The

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* In his statement Mr. Cox of MCI also makes a number of unfounded charges of alleged unfair or anticompetitive activity by the Bell System. The Bell System denies that it has ever engaged in any conduct violative of the antitrust laws. However, we do not believe it would serve the interests of this Subcommittee in considering S.2028 to make a detailed response to these allegations at this time. Moreover, all such matters are at issue in proceedings before the FCC or the courts.

courts have held, however, that "equalizing competition among competitors . . . is not the objective or role assigned by law to the Federal Communications Commission."* As Justice Frankfurter pointed out in the so-called Three Circuits case,** even in industries not subject to any regulation, "it is only in a blunt, undiscriminating sense that we speak of competition as an ultimate good." The opinion emphasized that in those industries where there are limits upon "the number of separate enterprises, that can efficiently, or conveniently, exist, the need for careful qualification of the scope of competition becomes manifest." Careful qualification of the scope of competition is required in those areas that are "natural monopolies or - more broadly - public utilities, in which active regulation has been found necessary to compensate for the inability of competition, to provide adequate regulation."***

One of the more drastic suggestions made to the Subcommittee is Professor Donald I. Baker's recommendation that Congress should add an additional provision to S.2028 to overrule by statute several recent decisions of the United States Supreme Court (pp. 15-16).**** These

* Hawaiian Telephone Co. v. FCC, 498 F.2d 771 at 776 (D.C. Cir. 1974), citing FCC v. RCA Communications, Inc., 346 U.S. 86 (1953).

** FCC v. RCA Communications, Inc., 346 U.S. 86 (1953).

*** 346 U.S. at 92.

**** The reference was to the cases of Gordon v. New York Stock Exchange, Inc., 422 U.S. 659 (1975) and United States v. National Association of Securities Dealers, Inc., 422 U.S. 694 (1975), which held, inter alia, that antitrust law immunity must be implied with respect to matters regulated under a public interest standard in order to protect regulated companies from the duplicative and inconsistent competition standard embodied in the antitrust laws.

cases rest upon the basic principle that the antitrust laws should be inapplicable to activities regulated under the public interest standard. The principle is one of fundamental fairness, namely, that no one can reasonably be expected to anticipate the commands of two masters where such commands are to be based upon different and inconsistent standards.

As described above, the Communications Act sets up an entirely different set of standards which are not consistent with the competition standard of the antitrust laws, but are necessary to carry out the public interest. Under that regulatory scheme, competitive considerations are subordinated to considerations necessary to enable the FCC to create and maintain a rapid, efficient communications network; to insure that adequate facilities are provided for the network; and to require the provisions of service pursuant to tariffs offering just and reasonable rates, practices, procedures and regulations.* Professor Baker's suggestion would simply override the fundamental considerations of fairness which underlie the Supreme Court's decisions and place regulated companies in the very dilemma from which the Court held that they should be protected.

Moreover, the fact is that Professor Baker's suggestion simply would not work in the telecommunications industry; he admits that "competition is essentially not economically feasible [for natural monopolies] because the cost of duplicating facilities is prohibitive." (p. 17) The only way that multiple suppliers can be accommodated in the

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* 47 U.S.C. §§ 151, 201-205, 214.

telecommunications industry, because of its natural monopoly characteristics, is for regulatory agencies to allocate markets to less efficient firms and to protect those markets by prohibiting existing firms from competing freely in them. This is not competition, but rather simply a form of cartelization - surely, the least efficient industry structure that can be imagined. We submit that this is not the intent of Congress nor should it be the effect of any bill intended to promote the objectives of regulatory or antitrust legislation.

Under the existing statutory scheme of regulation competition is only one of many factors to be considered by a regulatory agency in determining what course of action is in the public interest. In this respect, we call special attention to an important passage in the statement of Mr. Roderick M. Hills, Chairman, Securities and Exchange Commission, before this Subcommittee:

> "[E]ffective and appropriate government requires a careful analysis of industry practices and trends. An agency charged with the regulation of an industry must undertake a detailed analysis of such matters as the structure of an industry, the interrelationships between the regulated sector and the rest of the business community, the cost of doing business, the ease or difficulty with which firms may enter or leave the industry, economies of scale and degree of industry concentration." (p. 5)

The point is that effective regulation requires a number of considerations to be weighed if the public interest is to be served. Mr. Hills criticized S.2028 on the basis that it would remove this essential flexibility and "would condemn agency action if the least anticompetitive alternative for achieving a regulatory purpose were not adopted." (p. 10)

The economic policy of the United States has many strands, not just one. Recognizing this, Congress and the state governments have sensibly adopted other forms of economic organization where it is judged that the competitive market cannot be relied upon to meet the public interest standards.

S.2028 assumes that "competition spurs innovation" and "promotes productivity" and that elimination of anticompetitive behavior can contribute to "reducing prices, unemployment and inflation" (Secs. 2a(1) and (6)). Thus, S.2028 has as its ultimate objectives: lower prices; better service; in effect, the encouragement of innovation and the promotion of increased productivity, all attributes of an efficient enterprise or industry. We subscribe to these objectives.* The basic flaw in S.2028 is that it assumes that only competition can provide such benefits. This assumption may be generally correct for non-regulated environments, but, for the reasons Congress recognized in enacting the Communications Act, the assumption could be disastrous if applied to a comprehensive regulatory scheme for an industry where regulated monopoly provides the best industry structure to serve the public. Competition is not an economically feasible means for regulating natural monopolies.

In his statement submitted to this Subcommittee Professor Baker recognizes this fact and states that where there is a natural

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* See Statement of R. R. Nathan, dated July 10, 1974, before this Subcommittee in connection with its hearings on S. 1167, The Industrial Reorganization Act of 1973.

monopoly, "straight competition would be a costly or idle gesture." (p. 17)* Because it is a unitary system, this Nation's modern telecommunications network is a notable example of a single technological and economic unit that is able to provide virtually all of the telecommunications services required by the economy at real costs which should be lower than those of other possible suppliers.

The natural monopoly on which the telecommunications system rests - the natural monopoly to which Title II of the Communications Act is addressed - is the integrated switched telephone network - managed, maintained, and improved by the Bell System in cooperation with the Independent Telephone Companies. The technological imperative which requires a unitary switched network is the simple fact that a telephone system is useful only if it is possible to connect each telephone to every other telephone for two-way communication. Congress itself has reached this conclusion; Title II of the Communications Act of 1934 is addressed to this reality.

In 1921, recommending the legislation which became the Willis-Graham Act (now Section 221(a) of the Communications Act), the House Committee on Interstate and Foreign Commerce found that the duplication of telephone facilities "greatly increases the burdens which must be borne by the telephone users" and concluded that "the

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* Professor Baker would confine the scope of natural monopoly in telecommunications to the provision of local telecommunications services; we believe that this view is too narrow and too static. It does not recognize the technical and economic interdependence between local and intercity services and facilities.

best telephone service can be rendered by one company, under proper regulation as to rates and service."*

In 1932, as a part of a general investigation by Congress into the structure of American industry that had commenced several years earlier, a resolution of the House of Representatives directed an investigation of the corporate structure and organization of the telecommunications industry, the electric power industry and the gas industry.** Throughout the extensive investigation and hearings that followed, Congress carefully reexamined the structure of the telecommunications industry that had emerged from existing regulatory policies.

This investigation was conducted under the supervision of Dr. Walter M. W. Splawn, Special Counsel to the House Committee on Interstate and Foreign Commerce, who also supervised the investigation into the electric power and gas industries. Dr. Splawn's report on the telecommunications industry recognized that the technology of that industry was essential to and justified a single nationwide integrated structure. In this connection, his report specifically pointed out that the "present . . . monopoly in telephone service for long distance . . . has been recognized as lawful in the present act to regulate interstate commerce."***

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* H.R. Rep. No. 109, 67th Cong., 1st Sess. 1 (1921).

** H.R. Res. No. 59, 72d Cong., 1st Sess. (1932).

*** Report on Communications Companies, H.R. Rep. No. 1273, 73d Cong., 2d Sess. pt. III, No. 1, at X (1934).

Dr. Splawn was a recognized expert on industry structure, and the differences between his first report, on the telecommunications industry, and his second report, on the electric power and gas industries, presaged the different ways in which these industries have developed since the 1930's. The second Splawn Report urged the immediate dismemberment of electric power and gas holding company structures. In supporting this recommendation before the Senate Commerce Committee and the House Committee on Interstate and Foreign Commerce, Dr. Splawn described the unique interrelationships required for useful telecommunications and explained the differences between the structure needed in the telecommunications industry and that appropriate for the electric power industry:

> "Someone seems to have had a dream that the electric power business could be organized corporately and conducted very much as the telephone business is. Now there's quite a difference in the physical operation of the two. The telephone, in order to be most useful must be connected through switchboards with every other switchboard in the entire country."
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> * * * * *
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> "The power business is not like the telephone business. . . ."*

Congress accepted Dr. Splawn's recommendations. As to the telecommunications industry, Congress concluded that the structure of the Bell System should not be changed, but that all aspects of its

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* Hearings on S. 1725 Before the Senate Comm. on Interstate Commerce, 74th Cong., 1st Sess. 75 (1935); Hearings on H.R. 5423 Before the House Comm. on Interstate and Foreign Commerce, 74th Cong., 1st Sess. 180 (1935).

operations should be pervasively regulated in the public interest. As to the electric power and gas industries, Congress reached the very different conclusion that there should be extreme restructuring through divestiture by the holding companies of operating companies and manufacturing subsidiaries, with a prohibition of service contracts between operating and holding companies. These so-called "death sentence" provisions with respect to electric power and gas holding companies were enacted in the Public Utility Holding Company Act of 1935.

Both economic and technological developments in recent years make even more compelling today the reasons which led Congress to adopt a comprehensive national policy towards the telecommunications industry in 1934. The development of the economy has increased the relative importance of interstate and international telecommunications. The rate of change in technology increased rapidly, especially after the Second World War, thus making research, innovation, and the flow of change in telecommunications methods more and more important as an element in network development, maintenance, and management. As the modern American economy took shape, it became more obvious than ever that there was no feasible alternative to a unified system of network management if the nation wished to achieve a telecommunications system capable of optimal performance.

Similarly, to maintain enough capacity, but not too much, the continuous flow of capital investment required to improve and maintain the network as a viable entity must be geared to a reasonably

accurate plan for growth, based on the best possible economic and demographic forecasts for every part of the nation.

Planning for future growth; determining and achieving an appropriate but not excessive level of capacity; developing and introducing new and improved technologies compatible with the existing facilities of the network; and protecting and restoring the network all involve an endless flow of technical and economic decisions. The telecommunications industry (both the Bell System and Independent Telephone Companies) now requires approximately $12.5 billion annually for capital outlays. Obviously, large and unnecessary costs will be incurred if decisions to invest in communications plant depart significantly from the norm of optimization, that is, of minimizing the real costs to the economy of providing high quality service. Duplicate facilities and excess capacity carry a heavy price, a matter of major concern in an era of intense competition for capital.

Above all, policies that would fragment the network, or reduce its capacity to provide telecommunications services as cheaply as the progress of science permits, would deny the American economy the advantages of clear and obvious economies of scale, of complementarity, and of efficiency in using a vast aggregate of capital.

S.2028 ignores the foregoing; its provisions would apply indiscriminately to every regulated industry, regardless of its economic characteristics.* We do not believe that the present provisions of

* The testimonies presented to the Subcommittee by Dr. James C. Miller (p. 11) and by Professor Donald I. Baker (p. 16) both express concern that natural monopolies are not distinguished by the bill.

S.2028, relying as they do on the single standard of competition, will in fact promote the public interest in the telecommunications industry. S.2028 fails to recognize that a natural monopoly can be and in fact in the case of the Bell System has been regulated effectively in the public interest; the results are evident in the form of low cost, high quality and readily available telephone service, enjoyed by virtually everyone in the United States.

We would be glad, however, to cooperate with you or members of your staff should you determine to modify the bill.

STATEMENT OF H. E. BERG, EXECUTIVE VICE PRESIDENT AND CHIEF OPERATING OFFICER, GETTY OIL CO.

Getty Oil Company wishes to take this opportunity to express opposition to any form of petroleum industry divestiture legislation. We request this statement of opposition be made part of the record during the current Antitrust and Monopoly Subcommittee hearings.

Numerous studies conducted by economists, the Federal Government and the courts do not support charges of monopoly or anticompetitive practices by the oil companies.

Most important, the proponents of divestiture have failed to produce any evidence that dismembering the oil companies would benefit the American consumer in any way. The evidence instead suggests an extremely negative impact on the individual consumer and the independent business segments of the oil industry. These are the very people divestiture legislation is supposedly designed to benefit. For example, supplies of petroleum products would no longer be guaranteed to jobbers and dealers, greater financial and credit risks would likely be assumed by the small independent business people, pump prices for gasoline would undoubtedly increase to meet higher costs resulting from creation of more companies, and the United States could well become even more dependent on foreign oil during the crucial period of massive petroluem industry reorganization.

The American petroleum industry is a worldwide model of efficiency and techonological expertise. It has brought the American consumer the most reliable energy supplies at a lower cost than in any other industrialized nation. To penalize an industry for this expertise, growth and efficiency is not only unfair to the American consumers and stockholders but would jeopardize the free enterprise system which is the backbone of our economy.

What is needed is progress toward energy independence. Maximum efficiency in our Nation's energy development can do the job. Legislation which would fragment rather than unite America's energy effort would be disastrous for the entire Nation.

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Sincerely,

H. E. BERG.

WRITTEN QUESTIONS SUBMITTED TO WITNESSES FOR RESPONSES.

"MY ANSWERS TO SENATOR THURMOND'S QUESTIONS
OF MY TESTIMONY ON JAN. 22, 1976 ARE ATTACHED.
(SIGNED) RICHARD B. MANCKE

Answers to Senator Thurmond's Questions re
Divestiture of the Major Oil Companies

1. Do you feel the present attack on the oil companies is a result of public frustration with high petroleum prices?

1. Public frustration with high oil prices is one of the major factors explaining the present attack on the oil companies. Unfortunately, since OPEC, and not the major oil companies, is the major source of present high oil prices, this attack will accomplish nothing.

2. How important are the small independent oil companies in the structure of the petroleum industry today?

2. The small independent companies are very important in all phases of the oil business. There are thousands of independent crude oil producers and more than 100 refiners. The presence of these companies is evidence of the high amount of competition in this business.

3. If vertical divestiture occurred, in your opinion, would there be a sufficient number of entrepreneurs who would be willing to buy a pipeline or a refinery?

3. If there is vertical divestiture I believe that there would be a large number of investors who would be willing to buy a pipeline or a refinery. However, the key question is not whether the integrated companies' plants or equipment would be purchased, but at what price. I suspect that the new "independent" companies would pay less for these assets than they would if they could purchase an integrated operation.

4. If vertical divestiture occurred, in your opinion, would the American public pay lower prices for petroleum products?

4. I think that divestiture would result in higher petroleum prices. Not primarily because of the loss of integration economies. It is my opinion that while there are real efficiencies of integrated operations

they are not quantitatively large. Rather, the chief causes of higher petroleum costs are likely to be a) inefficiencies caused by the need to comply with extremely complex divestiture regulations, and b) higher costs because the divestiture debate diverts the attention of policy-makers from our real energy problems--especially the problems of reducing U.S. dependence on oil imports from insecure sources.

5. Would vertical divestiture of the major oil companies result in more dependence on foreign oil?

5. Vertical divestiture is likely to result in more dependence on foreign oil for two reasons. First, as long as the divestiture debate continues, companies will be reluctant to invest as much as they otherwise would in projects designed to find and develop new domestic energy sources. Second, the divestiture debate has diverted Congressional attention from passing legislation that would encourage increased production of domestic fuels, especially the two most important, natural gas and crude oil.

Mobil Oil Corporation

150 EAST 42ND STREET
NEW YORK NEW YORK 10017

EDMUND P HENNELLY
GENERAL MANAGER
GOVERNMENT RELATIONS DEPARTMENT

February 13, 1976

Mr. Peter N. Chumbris
Minority Chief Counsel
Senate Antitrust & Monopoly Subcommittee
Washington, D. C. 20510

Dear Pete:

In accordance with your request, I am submitting herewith answers to the questions which Senator Thurmond directed to Mr. Tavoulareas' divestiture testimony.

1. What was the amount of profits earned by Mobil Oil Corporation in 1975?

   Mobil's earnings for 1975 were an estimated $815.1 million. This figure includes an estimated $175 million for U.S. petroleum operations, and an estimated $517 million for foreign petroleum operations. Worldwide, Mobil's profit was only 1.5 cents on each gallon of product sold.

2. What was Mobil's rate of return on shareholder equity?

   Our rate of return on average shareholders' equity in 1975 was 12.2%.

3. How do these figures compare with previous profit figures?

   Our 1975 earnings were down 22% from 1974, when earnings totaled $1,047.4 million. But it is important to note that this figure includes $325 million foreign inventory profits (compared with only $75 million in 1975). Since these profits do not generate new cash flow, even 1974 was not

Mobil

Mr. Peter N. Chumbris -2- February 13, 1976

an unusually profitable year for Mobil.

In its U.S. petroleum operations, Mobil earned $292 million in 1974. So our earnings dropped sharply in 1975 -- due to a decline in crude oil and natural gas production, increased costs, and the loss of percentage depletion.

4. In your opinion, how many entrepreneurs would be willing to purchase a pipeline system or a refinery if the major oil companies were broken up?

Major companies might be able to sell some of their pipelines if buyers could be certain the present flow of oil would continue. Most entrepreneurs, however, would be deterred from purchasing these facilities because they would not be sure of getting an adequate rate of return.

But even if buyers of existing assets could be found, no entrepreneur would be willing to bid on a new pipeline to transport newly discovered reserves of oil or gas unless he could get a guarantee from the producing companies that oil would be available for a sufficient period to ensure a reasonable return on the investment. In this situation, nothing would be changed except that a contractual relationship between producer and transporter would be substituted for the ownership of the line by the integrated company.

5. Would that figure be different if the oil industry were deregulated?

To a degree, yes, because the entrepreneur would have a better chance of getting a return on his investment. But it is important to realize that dismantling the oil industry would still cost the consumer more, not less, because each segment of the business would be seeking to make a reasonable return on investment and their aggregated costs would be higher than those of

Mobil

Mr. Peter N. Chumbris -3- February 13, 1976

a more efficient, integrated company.

Sincerely,

EPH:ma

OTIS H. ELLIS' ANSWERS TO QUESTIONS SUBMITTED BY SENATOR STROM THURMOND (R-SC) AT TPF HEARING OF THE SUBCOMMITTEE ON ANTITRUST AND MONOPOLY REFERENCE VERTICAL DIVESTITURE OF THE MAJOR OIL COMPANIES—JANUARY 28, 1976

1. *Question.* What will passage of divestiture legislation do to America's quest for energy independence?

Answer. My answer is the passage of any form of divestiture legislation will retard and irreparably, in all respects, jeopardize the American search for energy independence.

2. *Question.* Will passage of this type legislation increase competition in the petroleum industry?

Answer. Passage of divestiture legislation will not increase competition in the petroleum industry, not either the short or long run, and to the contrary will minimize competition by ultimately leading to the formation of large groups within each tier of the industry thus eliminating many independent refiners, jobbers and retail dealers.

3. *Question.* What will passage of this type legislation mean to America's independent oil jobbers?

Answer. The passage of this type legislation will very seriously and adversely affect the competitive roll of the independent oil jobber and many will be eliminated.

4. *Question.* Do you think America's petroleum companies could accomplish divestiture within the 3 years allowed under S. 2387?

Answer. Even if we disregarded the irreparable damage to our energy situation if divestiture legislation were enacted, it would be virtually impossible to accomplish this divestiture in an orderly manner within the 3 years allowed under S. 2387. To push the vast marketing assets or refining assets of all of the "divested" companies on the market at one time, if all of them, or a significant number of them, elected to be producers, would create a virtual "fire sale" of these properties to the serious monetary detriment of the stock holders in these companies. Under such circumstances this would in effect amount to confiscation without due compensation.

5. *Question.* Do you think passage of S. 2387 will decrease the price of petroleum products to American consumers?

Answer. The passage of S. 2387, or any other form of divestiture legislation both short range and long range, in my judgment, will increase the price of petroleum products to American consumers but of even greater consequence will be the reduction in supply of these products to a point well below either national need or national demand.

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Dick H. Bryan's Answers to Questions Submitted by Senator Birch Bayh, Following His Testimony at the Hearing of the Subcommittee on Antitrust and Monopoly, Regarding Vertical Divestiture of the Major Oil Companies—January 28, 1976

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Answer. Even in the circumstances the irreparable damage to our energy situation if divestiture legislation were enacted, it would be virtually impossible to accomplish this divestiture in an orderly manner within the 3 years allowed under S. 2387. To push this vast businesses a sale or spinning assets of all of the "integrated" companies on the market at one time, a sale of them, or a significant number of them, appears to be practicable, would require putting "fire sale" of these properties to the serious detriment of all the stock holders in these companies. Under such circumstances this would be almost tantamount to confiscation without due compensation.

5. Question. Do you think passage of S. 2387 will increase the price of petroleum products to American consumers?

Answer. The passage of S. 2387, or any other form of divestiture legislation both short range and long range, in my judgment, will increase the price of petroleum products to American consumers but of even greater consequence will be the reduction in supply of these products to a point well below either national need or national demand.